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***Learning in Critical Care:
A Focused Ethnography
of Interprofessional
Learning Culture***

V PARK

PhD

2019

*Learning in Critical Care:
A Focused Ethnography of
Interprofessional Learning Culture*

VIKKI PARK

A thesis submitted in partial fulfilment
of the requirements of the
University of Northumbria at Newcastle
for the degree of
Doctor of Philosophy

Research undertaken in the
Faculty of Health & Life Sciences

December 2019

Abstract

Adult critical care is complex; therefore, the workforce develops specialist knowledge. Whilst interprofessional collaboration is concomitant with critical care, the ways different professions learn together are indistinct. This thesis explores the factors influencing interprofessional learning (IPL) culture in adult critical care, providing rich insight into staff perceptions and experiences of IPL, and investigates factors that promote or inhibit IPL in this acute care environment.

IPL culture was explored using focused ethnography, adopting an interpretive epistemological position, with an ontological stance of social constructionism. Data collected over 12 months, in three adult critical care units in North East England, used partial participant observation and semi-structured interviews with critical care professions. Rich ethnographic data was thematically analysed.

Findings showed that IPL occurred in all environments studied, but engagement with IPL differed across professions and potential IPL opportunities were missed. IPL culture was shaped by individuals, teams and organisations, and a changeable IPL climate existed which was affected by holistic influential factors. The environment was key to embedding IPL; in a space the visibility of professions promoted IPL more than their proximity, and each critical care department adapted spaces for IPL to occur. The IPL environment guide developed from the research findings indicates ways to enhance IPL. Whilst formal IPL opportunities were limited, professions perceived safe holistic patient centred care as a shared motivation to learn from others. Professions shared knowledge based upon their assumptions of peers' expertise, and IPL was enhanced when rationales underpinned instructions and when decision-making was interprofessional; the CAUSE decision-making model is a framework developed that incorporates rationales to promote IPL. Four stages of IPL were observed: preparing, enquiring, acting, and sharing, and IPL was enhanced when staff effectively collaborated, felt safe to ask questions, and when they humanised their professional role through humour and emotions as members of the community of critical care practice.

With rich insight into the complexities of IPL in adult critical care, further work is needed to explore potential IPL improvements based upon the ethnographic findings in this thesis.

Contents

Abstract	- 1 -
List of Tables and Figures	- 9 -
List of Abbreviations	- 10 -
Transcript Conventions	- 11 -
Acknowledgements	- 13 -
Declaration	- 15 -
CHAPTER 1: BACKGROUND	- 17 -
1.1 Introduction	- 17 -
1.2 Professional Background	- 17 -
1.3 Introduction to Interprofessional Learning (IPL)	- 18 -
1.4 Drivers for the Interprofessional Agenda in Healthcare	- 21 -
1.5 Interprofessional Approaches in Healthcare	- 22 -
1.6 Research Context: Adult Critical Care	- 24 -
1.7 The Research Aims	- 27 -
1.8 Structure of the Thesis	- 28 -
1.9 Summary	- 29 -
CHAPTER 2: LITERATURE REVIEW	- 31 -
2.1 Introduction	- 31 -
2.2 Literature Underpinning the Thesis	- 31 -
2.3 Search Strategy	- 32 -
2.4 Interprofessional Approaches in Critical Care	- 34 -
2.4.1 Nurse and Doctor Interactions	- 36 -
2.4.2 The Critical Care Team	- 39 -
2.5 Learning in Critical Care	- 42 -
2.5.1 Workplace Learning	- 43 -
2.5.2 Learning in Social Contexts	- 46 -
2.5.3 Critical Care Knowledge	- 48 -
2.5.4 The Critical Care Learning Environment	- 52 -
2.6 Interprofessional Learning in Adult Critical Care	- 55 -
2.7 Educational Theory	- 58 -
2.8 Summary	- 61 -
CHAPTER 3: METHODOLOGY	- 63 -
3.1 Introduction	- 63 -
3.2 Philosophical Position	- 63 -
3.2.1 Ontology and Epistemology	- 64 -
3.2.2 Social Constructionism	- 66 -
3.3 Conceptual Framework	- 68 -

3.3.1	Individual Level Learning	- 70 -
3.3.2	Team Level Learning	- 71 -
3.3.3	Organisational Level Learning	- 72 -
3.4	Methodology	- 73 -
3.4.1	Methodology Selection	- 74 -
3.4.2	Ethnography	- 74 -
3.4.3	Studying Culture	- 76 -
3.4.4	Focused Ethnography	- 78 -
3.4.5	Trustworthiness	- 79 -
3.5	<i>Summary</i>	- 85 -
	CHAPTER 4: RESEARCH METHODS	- 87 -
4.1	Introduction	- 87 -
4.2	Sampling	- 87 -
4.2.1	Defining the Population of Interest	- 87 -
4.2.2	Multiple Research Sites	- 88 -
4.2.3	The Sampling Strategy: Observations	- 89 -
4.2.4	The Sampling Strategy: Interviews	- 90 -
4.2.5	Accessing the Field	- 92 -
4.2.6	Leaving the Field	- 93 -
4.3	Data Collection	- 94 -
4.3.1	Partial Participant Observation	- 96 -
4.3.2	Observation Schedule	- 98 -
4.3.3	Observation Template	- 100 -
4.3.4	Semi-Structured Interviews	- 103 -
4.3.5	Interview Topic Guide	- 103 -
4.3.6	Conceptual Maps	- 105 -
4.4	Data Analysis	- 106 -
4.4.1	Ethnographic Data Analysis	- 106 -
4.4.2	Thematic Analysis Overview	- 108 -
4.4.3	TA Phase 1: Familiarisation with the Data	- 111 -
4.4.4	TA Phase 2: Coding	- 111 -
4.4.5	TA Phase 3: Searching for Themes	- 112 -
4.4.6	TA Phase 4: Reviewing Themes	- 114 -
4.4.7	TA Phase 5: Defining and Naming Themes	- 116 -
4.4.8	TA Phase 6: Writing Up	- 118 -
4.4.9	The Detailed Audit Trail	- 119 -
4.4.10	Reflexivity	- 120 -
4.5	Ethics	- 122 -

4.5.1	Ethical Approval	- 122 -
4.5.2	Ethical Considerations	- 122 -
4.5.3	Professional Role Conflict	- 124 -
4.5.4	Consent in Ethnography	- 125 -
4.5.5	Confidentiality and Data Protection	- 129 -
4.6	Summary	- 130 -
CHAPTER 5: PREFACE TO THE FINDINGS		- 131 -
5.1	Research Site Profiles	- 131 -
5.1.1	RS1: The Teaching Hospital	- 131 -
5.1.2	RS2: The District General Hospital	- 134 -
5.1.3	RS3: The Acute Hospital	- 137 -
5.2	Presentation of Findings	- 141 -
5.3	Summary	- 145 -
CHAPTER 6: EMBEDDING IPL		- 147 -
6.1	Chapter Overview	- 147 -
6.2	Visual Thematic Map of Findings	- 148 -
6.3	Environmental Effects	- 148 -
6.3.1	Physical Factors	- 149 -
6.3.2	Critical Care Layout	- 158 -
6.3.3	Creating Learning Zones	- 165 -
6.4	Ways of Learning	- 177 -
6.4.1	Learning from Others	- 177 -
6.4.2	Learning by Doing	- 192 -
6.4.3	Learning from Reflection	- 195 -
6.4.4	Theory and Training	- 202 -
6.5	Critical Care Practices	- 205 -
6.5.1	Regular Activities	- 205 -
6.5.2	External Drivers	- 210 -
6.5.3	Using Artefacts	- 211 -
6.5.4	Making Time	- 215 -
6.6	Summary	- 218 -
CHAPTER 7: COLLABORATIVE IPL		- 221 -
7.1	Chapter Overview	- 221 -
7.2	Visual Thematic Map of Findings	- 222 -
7.3	Staff Influences	- 222 -
7.3.1	Professional Role	- 223 -
7.3.2	Leadership Approaches	- 230 -
7.3.3	Interprofessional Presence	- 232 -

7.4	Building Relationships	- 234 -
7.4.1	Collaboration and Openness	- 235 -
7.4.2	Networking	- 239 -
7.4.3	Relationship Attributes	- 242 -
7.5	Community of Practice	- 249 -
7.5.1	Socialising	- 250 -
7.5.2	Commonality	- 253 -
7.5.3	Professional Perspectives	- 259 -
7.5.4	The Work Family	- 259 -
7.6	Disconnections	- 261 -
7.6.1	Tension	- 261 -
7.6.2	Uniprofessional Learning	- 266 -
7.7	Summary	- 270 -
CHAPTER 8: HUMANISING IPL		- 273 -
8.1	Chapter Overview	- 273 -
8.2	Visual Thematic Map of Findings	- 274 -
8.3	Being Human	- 274 -
8.3.1	Making Mistakes	- 275 -
8.3.2	Showing Personality	- 277 -
8.3.3	Making Connections	- 278 -
8.4	Human Behaviour	- 279 -
8.4.1	Being Motivated	- 279 -
8.4.2	Feeling Emotions	- 287 -
8.4.3	Using Humour	- 293 -
8.5	Summary	- 303 -
CHAPTER 9: DISCUSSION		- 305 -
9.1	Introduction	- 305 -
9.2	A Synopsis of the Overall Findings	- 305 -
9.2.1	Influential Factors Affecting IPL in Adult Critical Care	- 306 -
9.3	Original Contribution to the Evidence Base	- 308 -
9.3.1	Conceptual Framework and Theoretical Perspectives	- 309 -
9.3.2	IPL Climate	- 310 -
9.3.3	The Four Stages of IPL	- 311 -
9.3.4	Knowledge Differentials	- 312 -
9.3.5	Enhancing IPL with Decision-Making Rationales	- 314 -
9.3.6	The CAUSE Decision-Making Model	- 315 -
9.3.7	Holistic Patient Centred Care and IPL	- 317 -
9.3.8	Interprofessionally Learning to Use Humour	- 318 -

9.3.9	Humour as a Conduit to IPL	- 319 -
9.3.10	Humour as Respite for IPL	- 321 -
9.3.11	Emotional IPL	- 322 -
9.3.12	Interprofessional Presence	- 322 -
9.3.13	Critical Care as an Extended Work Family	- 324 -
9.3.14	Extended Professional Roles and IPL	- 324 -
9.3.15	Leadership and IPL	- 325 -
9.4	Situating Findings within Literature: Embedding IPL	- 326 -
9.4.1	Physical Environmental Factors	- 327 -
9.4.2	Space, Place, and IPL	- 327 -
9.4.3	Creating IPL Zones	- 329 -
9.4.4	Neutral Zones for IPL	- 330 -
9.4.5	Impression Management and IPL	- 331 -
9.4.6	Socialisation and IPL	- 333 -
9.4.7	Legitimate Peripheral Participation and IPL	- 334 -
9.4.8	Learning Theories and IPL	- 334 -
9.4.9	Inquisitiveness in IPL	- 335 -
9.4.10	Interprofessional Simulation, Debrief and Reflection	- 336 -
9.4.11	Interprofessional Approaches	- 339 -
9.4.12	Moments for IPL	- 340 -
9.4.13	Critical Care Practices and IPL	- 341 -
9.4.14	Artefacts and IPL in Critical Care	- 343 -
9.4.15	Time and IPL	- 345 -
9.5	Situating Findings within Literature: Collaborative IPL	- 347 -
9.5.1	Professional Roles and Jurisdictions	- 348 -
9.5.2	Critical Care as a Community	- 349 -
9.5.3	Socialisation, Collaboration, and IPL	- 350 -
9.5.4	Psychological Safety and Learning from a Crisis	- 351 -
9.5.5	Disconnections and Intraprofessional Activity	- 353 -
9.6	Situating Findings within the Literature: Humanising IPL	- 355 -
9.6.1	Being Human in Critical Care	- 355 -
9.6.2	Being Human and Making Mistakes	- 358 -
9.6.3	Personalities, Making Connections and Human Behaviour	- 359 -
9.6.4	Motivation for IPL	- 361 -
9.6.5	Intrinsic Motivation for IPL	- 362 -
9.6.6	Extrinsic Motivation for IPL	- 363 -
9.6.7	Emotions and Learning in Critical Care	- 364 -
9.6.8	Learning to Manage Emotions	- 366 -

9.6.9	Learning to Adapt Emotions	- 369 -
9.7	Implications for Practice, Policy, and Education	- 371 -
9.7.1	Practice Implications	- 372 -
9.7.2	Policy Implications	- 376 -
9.7.3	Education Implications	- 380 -
9.8	Strengths and Limitations	- 381 -
9.9	Summary	- 384 -
CHAPTER 10: CONCLUSION		- 387 -
10.1	Researcher Reflections	- 387 -
10.2	Future Research	- 390 -
10.3	Dissemination	- 390 -
10.4	Final Thoughts	- 391 -
Appendices		- 395 -
Appendix 1: Ethics Approval Letter		- 397 -
Appendix 2: Consent Form for Observation		- 398 -
Appendix 3: Consent Form for Interviews		- 399 -
Appendix 4: Participant Information Sheet		- 400 -
Appendix 5: Research Posters		- 404 -
Appendix 6: Participant Information Cards		- 406 -
Appendix 7: Participant Letters		- 407 -
Appendix 8: Observation Template		- 410 -
Appendix 9: Interview Topic Guide		- 411 -
Appendix 10: Examples of Analysis		- 413 -
Appendix 10.1: Researcher Analysed Interview Transcript by Hand		- 414 -
Appendix 10.2: Supervisor Analysed Interview Transcript by Hand		- 415 -
Appendix 10.3: Conceptual Mapping of Themes		- 416 -
Appendix 10.4: Central Organising Concepts		- 417 -
Appendix 10.5: Research Poster of Early Findings with Candidate Themes		- 418 -
Appendix 10.6: NVivo TM Data Analysis		- 419 -
Appendix 10.7: Power Point Presentation of Analysed Findings		- 425 -
Appendix 10.8: An Example of the Data Analysis Process		- 430 -
Appendix 11: Conceptual Map of Educational Theories		- 441 -
Appendix 12: Reflexivity Examples		- 442 -
Appendix 13: Dissemination		- 446 -
References		- 447 -

List of Tables and Figures

Table 1.1	Levels of critical care illness	p.25
Table 2.1	Literature review stages	p.32
Table 3.1	Philosophical assumptions in the study (Creswell, 2013)	p.65
Table 3.2	Types of ethnography	p.78
Table 3.3	Quality criteria for ethnographic research	p.83-85
Table 4.1	Inclusion and exclusion criteria for observation sampling	p.90
Table 4.2	Inclusion and exclusion criteria for interview sampling	p.92
Table 4.3	Data collection process	p.95
Table 4.4	Observation schedule example	p.99
Table 4.5	Interview questions based upon Spradley (1979)	p.104
Table 4.6	Six phase approach to Thematic Analysis (Braun & Clarke, 2006)	p.109-110
Table 4.7	Seven iterations of analysis	p.119-120
Table 9.1	Influential factors affecting IPL in adult critical care	p.307
Table 9.2	Todres <i>et al.</i> 's (2009) humanising dimensions	p.356
Table 9.3	Research recommendations	p.371
Table 9.4	IPL Environment Guide	p.377-378
Table 9.5	Strengths and limitations of the study	p.382

Figure 2.1	Literature search strategy	p.34
Figure 2.2	The doctoral research topic situated within existing literature	p.62
Figure 3.1	Conceptual framework for IPL culture in adult critical care	p.69
Figure 4.1	Data collection sequence timeline	p.96
Figure 4.2	Framework of learning conditions	p.101
Figure 4.3	Observation template dimensions	p.102
Figure 4.4	Data organised by hierarchical trees within NVivo	p.115
Figure 5.1	Overarching themes and themes	p.141
Figure 5.2	IPL culture in adult critical care: A thematic map of findings	p.143
Figure 6.1	Visual thematic map of findings: Embedding IPL	p.148
Figure 7.1	Visual thematic map of findings: Collaborative IPL	p.222
Figure 8.1	Visual thematic map of findings: Humanising IPL	p.274
Figure 9.1	Original contribution to knowledge within the thesis	p.308
Figure 9.2	A theoretical perspective of IPL culture	p.309
Figure 9.3	The four stages of IPL	p.312
Figure 9.4	The CAUSE Decision-Making model	p.316

List of Abbreviations

ACCP	Advanced Critical Care Practitioner
CAIPE	Centre for the Advancement of Interprofessional Education
CASP	Critical Appraisal Skills Programme
CC3N	The Critical Care National Network Nurse Leads Forum
CCA	Critical Care Associate
CCOT	Critical Care Outreach Team
CINAHL	Cumulative Index of Nursing and Allied Health
COC	Central Organising Concepts
Cons	Consultant
CoP	Community of Practice
CPD	Continual Professional Development
CQC	Care Quality Commission
DBS	Disclosure and Barring Service
Dr	Doctor
DH	Department of Health
ENT	Ear, Nose and Throat
ETHOS	British Library doctoral database
F1	Foundation Year 1 Doctor
F2	Foundation Year 2 Doctor
FICM	Faculty of Intensive Care Medicine
GMC	General Medical Council
GPC	Good Clinical Practice (Training)
HCA	Healthcare Assistant
HCPC	Health and Care Professional Council
HDU	High Dependency Unit (Also called Critical Care)
HEI	Higher Education Institutes
HRA	Health Research Authority
ICCU	Integrated Critical Care Unit (Also called Critical Care)
ICS	Intensive Care Society
ICU	Intensive Care Unit (Also called Critical Care)
IPC	Interprofessional Collaboration
IPE	Interprofessional Education
IPL	Interprofessional Learning
IRAS	Integrated Research Application System
ITU	Intensive Therapy Unit (Also called Critical Care)
KM	Knowledge Management

List of Abbreviations (continued)

LPP	Legitimate Peripheral Practice
M&M	Morbidity and Mortality
MDT	Multidisciplinary Team
NHS	National Health Service
NIC	Nurse in Charge
NICE	The National Institute for Health and Care Excellence
NIHR	National Institute of Health Research
NMC	Nursing and Midwifery Council
PA	Physiotherapy Assistant
PC	Personal Computer
PCC	Patient Centred Care
PhD	Doctor of Philosophy
Physio	Physiotherapist
RaCI	Rehabilitation after Critical Illness
Reg	Registrar Doctor
RCN	Royal College of Nursing
RCP	Royal College of Physicians
RS1/ 2 / 3	Research Site 1 / 2 / 3
SfC/SfH	Skills for Care and Skills for Health
TA	Thematic Analysis
UIC	Unique identifier codes
UK	United Kingdom
VAP	Ventilator Acquired Pneumonia
WHO	World Health Organisation
ZPD	Zone of Proximal Development

Transcript Conventions

[]	Material has been added by the researcher for clarity
...	Text has been removed from the data extract
()	Material has been added by the researcher for context e.g. staff roles
'...'	Single quotations are used to show participant terms from data
"..."	Double quotations are used to capture quotes

Acknowledgements

The pursuit of knowledge has taught me more than these pages can ever show. In the background of the doctoral journey, I have loved, and lost, and grown so much.

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The final acknowledgement is reserved for my father, Colin; the strongest man I have known, who I miss excruciatingly and who remains my role model in life.

Without all the aforementioned, my PhD journey may never have begun or concluded.

Declaration

I declare that the work contained in this thesis has not been submitted for any other award and that it is all my own work. I also confirm that this work fully acknowledges opinions, ideas, and contributions from the work of others.

Any ethical clearance for the research presented in this thesis has been approved. Approval has been sought and granted by the Northumbria University Faculty Ethics Committee in November 2014 and the Health Research Association in October 2015.

I declare that the word count of this thesis is 92,268 words

Name: Vikki Park

Signature:

Date: 3rd March 2021

CHAPTER 1: BACKGROUND

1.1 Introduction

This thesis advances current knowledge of interprofessional learning (IPL), offering new insight to the learning culture in the complex environment of adult critical care. To explore IPL culture, and to gain an understanding of how different professions learn with and from each other within this environment, a methodology capable of rich description was needed to elicit the often invisible and subjective experience of learning. Focused ethnography is used to explore IPL culture, using partial participant observation and semi-structured interviews. This methodology aligns with the exploratory research, whilst the philosophical assumptions underpinning the study are cognisant with social constructionism and socio-cultural learning theory. Motivation to research this topic was founded by the prospect of transforming IPL practices in critical care, advancing current knowledge with credible transferrable research.

1.2 Professional Background

In my 20 years' healthcare experience, I predominantly worked within adult critical care. Whilst in this environment I became increasingly interested in the ways different professionals learn in practice, particularly whilst working within teams. A distinction between interprofessional working and learning became apparent and, working within interprofessional groups did not inherently mean that experienced practitioners shared their knowledge or expertise with others to facilitate overt learning. In my professional experience, interprofessional working and learning often appeared two separate exclusive entities. This practice observation is supported by the Centre of the Advancement of Interprofessional Education (CAIPE, 2017) who claim that

integrating services is insufficient to ensure collaborative practice and to deliver better care; learners need to pull together to care for others and professions need to be actively engaged to collectively learn. This observation substantiates the rationale and motivation to explore IPL within the practice environment of adult critical care, an aspect of healthcare poorly researched.

1.3 Introduction to Interprofessional Learning (IPL)

The approach-coined IPL describes occasions where different professionals learn through interactions, thereby developing collaborative practice (Howkins & Bray, 2008). Barr and Low (2013) assert that IPL happens between two or more professions, to improve knowledge and competence, either during formal interprofessional education (IPE) or informally in practice or educational environments. The goal is for two or more professionals to work together to deliver effective practice (Pearson *et al.*, 2005). IPL may occur opportunistically in an unplanned, informal manner, and in formal education settings (Freeth *et al.*, 2005; Howkins & Bray, 2008). Clark (2006) describes IPL as process-based, where professions learn to work together based upon experience, and knowledge is created through social processes.

Interprofessional research in practice settings has concentrated mostly on formal educational interventions (Conway, 2009; Nisbet *et al.*, 2013; Pearson *et al.*, 2005), where either students or practitioners are taught specific skills, in a pre-planned formal manner, with facilitators or didactic frameworks. IPL can be the outcome of formal structured education; this educational approach is referred to as IPE (Interprofessional Education).

IPE research is accruing and incorporation into health and social care education aims to develop interprofessional working, sharing skills to inform the future workforce. IPE, with the goal of learning about others, remains an integral part of undergraduate health and social care professional curricula (Barr *et al.*, 2011; Marshall, 2005). A large body of evidence has accumulated regarding students and IPE. However, Barwell *et al.* (2013) emphasise research needs to explore the effects of IPL beyond undergraduate studies, advocating conducting longitudinal research that critically observes the process of learning to address gaps in literature. Other research has explored how knowledge gained from formal IPE training is transferred into practice (Clarke *et al.*, 1996; Durston & Rance, 1995; Hogston, 1995; Little, 1999), and views more generically concerning the overall value of IPE (Barr *et al.*, 2011; Cooper *et al.*, 2001; Derbyshire & Machin, 2010; Pollard & Meirs, 2006; Stepney *et al.*, 2011).

Several definitions of IPE exist; the most widely cited is from CAIPE (2017):

"Interprofessional Education occurs when two or more professions learn with, from and about each other to improve collaboration and the quality of care".

Similarly, the World Health Organisation (WHO, 2010) definition focuses on IPE to promote collaboration between professions to improve patient health outcomes. IPE is a formal educational process, intending to broaden the sphere of knowledge and understanding of contiguous professional roles. Beyond the scope of understanding health professional remits to improve collaborative working, IPE does little to illustrate the nature or extent of IPL as a product of the IPE process.

The terms IPL and IPE are often used interchangeably within literature. For example, whilst Thistlethwaite and Moran (2010) acknowledge the terms IPL and IPE differ, with IPL concerned with processes of micro-learning and IPE shaped by educational frameworks, they continue to use the terms interchangeably to reflect the writing of other researchers in the field. Within this thesis, the terms IPE and IPL are not interchangeable and are viewed as divergent perspectives. IPE is viewed as a formal educational process, focusing upon collaboration to improve patient outcomes, whereas IPL is viewed as learning and knowledge development which can emerge from the IPE process in addition to other ways of learning. Barr (2005) agrees IPL can arise as a product of IPE but claims serendipitous IPL can happen spontaneously from two or more professions interacting. Serendipitous IPL encapsulates learning that is unplanned and implicit, occurring through spontaneous interactions between health professionals (Freeth *et al.*, 2005). The principle aim of this research was to explore the IPL culture of adult critical care, and to study IPL arising from formal IPE or serendipitous, informal learning.

There remains a dearth of research into IPL in healthcare, where health professionals naturally learn together, in informal ways, as part of interprofessional teams. Rather than exploring learning specifically, research often concentrates on collaborative working outcomes, with measurable indicators such as mortality or the duration of patient care episodes (Northway & Mawdsley, 2008; Wheelan *et al.*, 2003). Lloyd-Jones *et al.* (2007) infer that IPL does occur in healthcare practice but that it is not articulated or celebrated. Begley (2009) previously called for more rigorous research into IPL in practice, despite insufficient evidence to support IPL in healthcare. Therefore, this research, exploring IPL culture in adult critical care, contributes to the gap in existing literature (see chapter 2: *Literature Review*).

Within the context of this thesis, and to frame the research, IPL is defined as:

Interprofessional learning refers to learning which happens between different occupational groups, through the collaborative sharing of expertise, knowledge, and experience.

1.4 Drivers for the Interprofessional Agenda in Healthcare

Health professionals are working, and learning, more collaboratively to meet health and social care challenges (Lloyd-Jones *et al.*, 2007). Consequently, IPL remains a persistent socio-political driver and is high on the political agenda as a means of improving health and social care services, often in response to high profile and negligent cases (Pollard *et al.*, 2005). The Department of Health (DH) have been particularly influential in promoting collaborative interprofessional working and have pushed for means of achieving this with numerous publications over the years (DH, 1998, 2000a, 2001a, 2001b, 2006). The effectiveness of the government's modernisation agenda for health and social care in relation to IPE, has been evaluated in commissioned research, such as Miller *et al.* (2006), and the complexities of IPE, collaborative working and learning in healthcare have been indicated.

United Kingdom (UK) government policy advocates interprofessional approaches within clinical practice and intimate advantages such as improved patient healthcare outcomes, increased staff knowledge and experience, improved collaborative working and safe and effective holistic care provision (DH, 2000a, 2001a, 2001b, 2003, 2006, 2008a, 2008b).

For critical care, one government document was heavily influential in changing the structure and operational function. ‘Comprehensive Critical Care’ was a government led review of UK adult critical care services (DH, 2000b). Historically, intensive care units and high dependency units operated independently, and the White Paper recommended integration to form combined critical care services. This called for increased collaborative practices to achieve seamless critical care provision across the wider hospital environment. Consequently, critical care staff had to learn with and from each other to adapt to the collaborative agenda.

The drive for learning between different professionals is not UK specific. In their Framework for Action on Interprofessional Education and Collaborative Practice, WHO (2010) recognise the substantial evidence base to promote interprofessional collaboration and advocate interprofessional mechanisms to improve collaborative healthcare practices and patient care. The framework outlines mechanisms such as ensuring supportive management practices, recognising a need to change culture and to improve health worker attitudes as a means of mitigating the global health workforce crisis, thereby shaping effective interprofessional education and collaborative healthcare practices and patient care. Lewy (2010) argues this global drive has transpired despite a poor evidence base to support the interprofessional approach in clinical practice. This supports the need for further credible research into IPL in healthcare.

1.5 Interprofessional Approaches in Healthcare

According to Murray-Davis *et al.* (2011) interprofessional working and learning have become central priorities within healthcare. Thistlethwaite and Moran (2010) indicate

that IPL has become integral to pre-qualification and post-qualification healthcare education. In doing so, it has become increasingly significant to the provision of effective and resourceful healthcare (Murray-Davis *et al.*, 2011). To promote an increasingly collaborative working environment, successful IPL is dependent upon the increased demand to work closely with others at work (Marsick & Volpe, 1999).

Evidence on collaboration in healthcare is contentious, with tentative advantages proposed for patients and professionals. In a systematic review of IPE literature, Reeves *et al.* (2011) claimed there is limited but emerging evidence that applying the IPE process to healthcare education may enhance practice and improve service delivery. In a more recent systematic review, Reeves *et al.* (2017) investigated whether strategies to improve interprofessional collaboration (IPC) had a positive impact on patient care. Based on the low to very low certainty of evidence, there was insufficient evidence to reach conclusions about the effectiveness of interprofessional collaborative interventions; the rigour of underpinning evidence needs to increase to appropriately inform policies and future practice. Interprofessional evidence continues to accumulate, deliberating the impact of IPC and IPE in practice, and Xyrichis (2018) attests there is sufficient robust evidence to claim that collaborative working affects patient care.

Earlier research by Freeman *et al.* (2000) found that people construct interprofessional teamwork differently and this can impede communication, professional role development and learning in the team, as well as exacerbating resentment, affecting professional esteem and creating conflict. Conversely, Barr (2005) describes positive interprofessional interactions, encouraged collaboration and improvements in patient

care within his findings on IPC. Recent research supports these findings (Dietz *et al.*, 2014; Reeves *et al.*, 2013a; Reeves *et al.*, 2017), emphasising the need for IPC within healthcare.

A body of IPE research is emerging with undergraduate students and newly qualified practitioners regarding the influence on interprofessional interactions in practice (Barr *et al.*, 2011; Cooper *et al.*, 2001; Derbyshire & Machin, 2010; Pollard & Meirs, 2006; Stepney *et al.*, 2011). Whilst health professional students are being educated with an interprofessional focus, research conducted by Pollard (2008) and Conway (2009) suggest qualified staff need to collaborate to develop their interprofessional practice to effectively facilitate and support students' interprofessional skill development. Gilbert *et al.* (2000) affirm that university programmes need to ensure future health graduates can work together effectively, to enable healthcare staff to share their expertise and knowledge, to provide care that meets patient needs.

1.6 Research Context: Adult Critical Care

Within this thesis, the following definition applies to the term 'adult critical care':

Adult critical care refers to the complex and acute care provided to adults, with single or multiple organ failure, who are cared for within the critical care unit and there should be the prospect of recovery or improvement in the patients' condition at the time of their admission.

Critical care encapsulates high dependency units (HDUs) and intensive care units (ICUs). Critically ill patients require staffing provision that reflects the severity of illness and increased patient safety demands (Royal College of Nursing (RCN), 2017). UK guidance for critical care staffing levels from the Faculty of Intensive Care Medicine and Intensive Care Society (FICM & ICS, 2019) assert that standards *must* be integral to practice and recommendations *should* be integral to UK intensive care medicine.

The classification of levels of patient care developed by the DH (2000b) in the report Comprehensive Critical Care are adopted in the FICM and ICS guideline. The ‘level’ of a patient refers to the severity of patients’ illness and is categorised on a scale of 0 – 3. An increase in the score represents increased acute illness, as shown below:

Table 1.1 Levels of critical care illness

Level 0	Patients whose needs can be met through normal ward care in an acute Hospital
Level 1	Patients at risk of their condition deteriorating, or those recently relocated from higher levels of care, whose needs can be met on an acute ward with additional advice and support from the critical care team
Level 2	Patients requiring more detailed observation or intervention including support for a single failing organ system or post-operative care and those ‘stepping down’ from higher levels of care
Level 3	Patients requiring advanced respiratory support alone, or basic respiratory support together with support of at least two organ systems. This level includes all complex patients requiring support for multi-organ failure.

Due to the complexity of adult critical care, numerous professionals are required to work together successfully (Rose, 2011). Critical care units are frequently described

as complex, demanding and challenging (Pilcher, 2009; Rothschild *et al.*, 2005; Scholes, 2006), requiring practitioners to work closely and effectively to meet patients' needs (Paradis *et al.*, 2014b), to promote patient safety and work towards quality improvement (Paradis *et al.*, 2013) and they comprise complex functioning interprofessional teams (Rose, 2011). In this clinical environment, Scholes (2006) describes thoughtful and intelligent engagement between colleagues, and with patients and relatives. Pilcher (2009) agrees, claiming that to function effectively in this contemporary complex setting, increased attention is needed to collaborate effectively between health professionals. This reflects the large body of literature concerned with team working and collaboration in health and social care generally, alongside an increasing evidence base of these issues more specifically within this acute care environment (Hawryluck *et al.*, 2002; Northway & Mawdsley, 2008; Pilcher, 2009; Rose, 2011; Surgenor *et al.*, 2003; Wheelan *et al.*, 2003). Critical care staff need to be prepared to provide specialist care to severely ill patients, by learning from high quality education and training, and working together (FICM & ICS, 2019). The way critical care staff develop their knowledge and skill base in practice appears fundamental to effective care provision.

The adult critical care environment is regarded as a place to learn (Price, 2013), with the potential to share interprofessional knowledge between staff (Wagter *et al.*, 2012). However, Paradis *et al.* (2014a) emphasise literature is sparse in this area, despite recognition that IPC in adult critical care units improve patient safety and the quality of patient care. They suggest increased understanding is needed regarding the effects that culture or context have on shaping interprofessional practices and advocate ethnography as an appropriate research methodology.

There is a continued dearth of research relating to IPL in adult critical care and Lewy (2010) emphasises that little is known about IPL generally in clinical practice. This thesis offers an original contribution to knowledge, adding to the limited discussion and lack of current understanding. To position this thesis within the wider evidence base and field of study, chapter two (*Literature Review*) explores the current evidence concerning IPL within healthcare environments and highlights previous research on learning within adult critical care.

1.7 *The Research Aims*

The research intended to explore the ways different staff learn with and from each other in adult critical care. IPL is the term extensively used to describe this approach to learning, although other terms exist, such as inter-disciplinary, multi-disciplinary and multi-professional. The research aimed to elicit a greater understanding of the factors that promote, or conversely inhibit, effective IPL.

This focused ethnography aimed to:

- Develop a rich description of the IPL culture in adult critical care.
- Gain in-depth understanding of critical care staff perceptions and experiences of IPL within adult critical care.
- Identify the perceived factors promoting or inhibiting IPL in adult critical care.

The thick description from the inductive iterative ethnography led to development of a research question as the social phenomena of IPL was studied (Reeves *et al.*, 2013b):

What influences interprofessional learning (IPL) culture in the adult critical care environment?

1.8 *Structure of the Thesis*

This thesis comprises ten chapters with additional information in the appendices.

Chapter 1, *Background*, (this chapter) introduces the thesis topic and provides an overview of the research focus, the specific context and the research aims.

Chapter 2, *Literature Review*, reviews existing literature preceding this research. An iterative, comprehensive review of literature supported the development of this thesis and underpinned the doctoral journey. This chapter explicates previous research relating to interprofessional approaches and learning in critical care.

Chapter 3, *Methodology*, discusses focused ethnography, highlighting the philosophical lens through which the thesis is viewed. Trustworthiness and rigour are discussed, with methodological limitations. Literature is related to the conceptual framework developed to situate the study within the current field.

Chapter 4, *Method*, elucidates the research methods of partial participant observation and semi-structured interviews. It discusses sampling and participant recruitment, thematic analysis (TA) of data and ethics.

Chapter 5, *Preface to Findings*, profiles the three research sites that participated in the study. An explanation of the presentation of findings constructed from the thematic data analysis is provided.

Chapter 6, *Embedding IPL*, presents the first overarching theme from the findings and recognises opportunities for IPL within adult critical care. This chapter provides rich description of the environmental effects on IPL, the ways of learning adopted by staff and critical care practices within the environment.

Chapter 7, *Collaborative IPL*, describes the people in critical care and building relationships through collaboration whilst learning with and from colleagues. The critical care team is presented as a community of practice (CoP) and disconnections with IPL are discussed.

Chapter 8, *Humanising IPL*, illustrates how being human and working within a complex, fast paced and demanding environment affects IPL. Human behaviour is explored from the perspective of motivation, humour and emotions, and insight is given into the nuances of being human in the critical care team.

Chapter 9, *Discussion*, critically explores the interpreted findings. A synopsis of overall findings is presented and the original contribution to knowledge is explicated. Research findings are situated within underlying theories, relevant literature, and previous research. IPL in adult critical care is considered regarding implications to practice, policy and education, with recommendations made for future practice. Strengths and limitations of the research conclude the chapter.

Chapter 10, *Conclusion*, completes the thesis and discusses researcher reflections, future research suggestions, dissemination of findings and final thoughts.

The appendices contain relevant information which informed the research, such as ethical approval, research documentation and dissemination of findings information.

1.9 *Summary*

In summary, this introductory chapter provides insight to my professional background and associated interest in IPL culture, outlining the thesis focus. Adult critical care is contextually situated as the environment under investigation, and the research aims, and question are presented. This chapter closes with an outline of the thesis structure. Chapter two reviews the literature relevant to this research.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter presents a review of literature situating the research topic of IPL in adult critical care into the current body of evidence. Literature is appraised relating to the key concepts of the research aims. The adult critical care context is discussed in relation to previous interprofessional studies and research into learning, and IPL literature is reviewed with respect to ethnographic methodologies. Chapter three includes methodological literature, with a detailed account of the philosophical position adopted within this thesis.

2.2 Literature Underpinning the Thesis

Gradual, but recurrent, engagement with relevant literature occurred throughout the doctorate. To avoid pre-empting findings in the early stages of research, strategic engagement with literature occurred. Spradley (1979) rationalises this by emphasising the primary purpose of ethnographic analysis is to avoid creating order and pattern in the cultural knowledge by imposing outside categories, because cultural knowledge in ethnography should be discovered. Intermittent review of relevant literature supports the iterative approach adopted, and gradual engagement with existing theories reduced the likelihood of forcing or coercing pre-conceived ideas that could steer research findings in a pre-determined or subjective direction. Holloway and Todres (2010) support this, explaining that during data interpretation in ethnography, researchers critically compare their work and inferences with previous findings to construct a holistic picture of the culture but, principally, they need to ensure the participant perspective is recognisable in the final ethnographic account. Therefore, different information was required, at varying stages of the doctorate (Table 2.1).

Table 2.1 Literature review stages

Stage of research	Purpose of the review
Research design	To ascertain the scope for an original contribution to knowledge
Establishing the philosophical research stance	To inform development of the conceptual framework
Outlining epistemological and ontological perspectives	To extricate personal philosophical beliefs about the nature of knowledge
Ethical approval	To refine and justify the chosen approach of focused ethnography
Fieldwork and data analysis	To inform and interpret the findings with respect to theories and literature
Writing the thesis	Chapters were constructed and situated within fields of literature

2.3 Search Strategy

Whilst a systematic review was not conducted, a comprehensive, rigorous and systematic approach was taken; this is needed for literature reviews undertaken for an academic award, or with the aim of influencing practice (Aveyard, 2011). The literature was reviewed at regular intervals to maintain currency and to iteratively inform the research at critical points (Silverman, 2011). A high volume of literature was reviewed and the computer software programme EndNote, helped organise the documents. Electronic databases were used, including CINAHL (Cumulative Index of Nursing and Allied Health), PubMed and Science Direct. However, grey literature, doctoral theses and organisational publications, are often excluded from academic journal databases and have the potential to influence priorities in critical care research and practice (Olding *et al.*, 2016). Therefore, additional sources included doctoral theses from the British Library doctoral database (EThOS), DH, WHO, CAIPE, and Research Gate. Articles were hand searched, including reference lists, and key journals were reviewed (Cronin *et al.*, 2008).

Silverman (2010) advocates writing the literature review at, or around, the point of data collection and analysis. This literature review chapter, written following data analysis, explores key concepts of the research. The timescale selected for the literature search, from 2000 to 2019, reflects the publication of the document ‘Comprehensive Critical Care’ (DH, 2000b) which operationalised isolated wards into integrated critical care units. Literature was restricted to English language, and contents related specifically to IPL, adult critical care, and ethnography. Literature quality was ascertained with reference to the CASP critical appraisal tool (Critical Appraisal Skills Programme, 2018) and, to ensure relevance, abstracts were read and keywords were selectively chosen, using Boolean operators to focus key aspects of the review (Cronin *et al.*, 2008). Truncation operators (*) ensured variations of words were searched. Figure 2.1 shows the literature search strategy, identifying literature sources, keywords, and key journals.

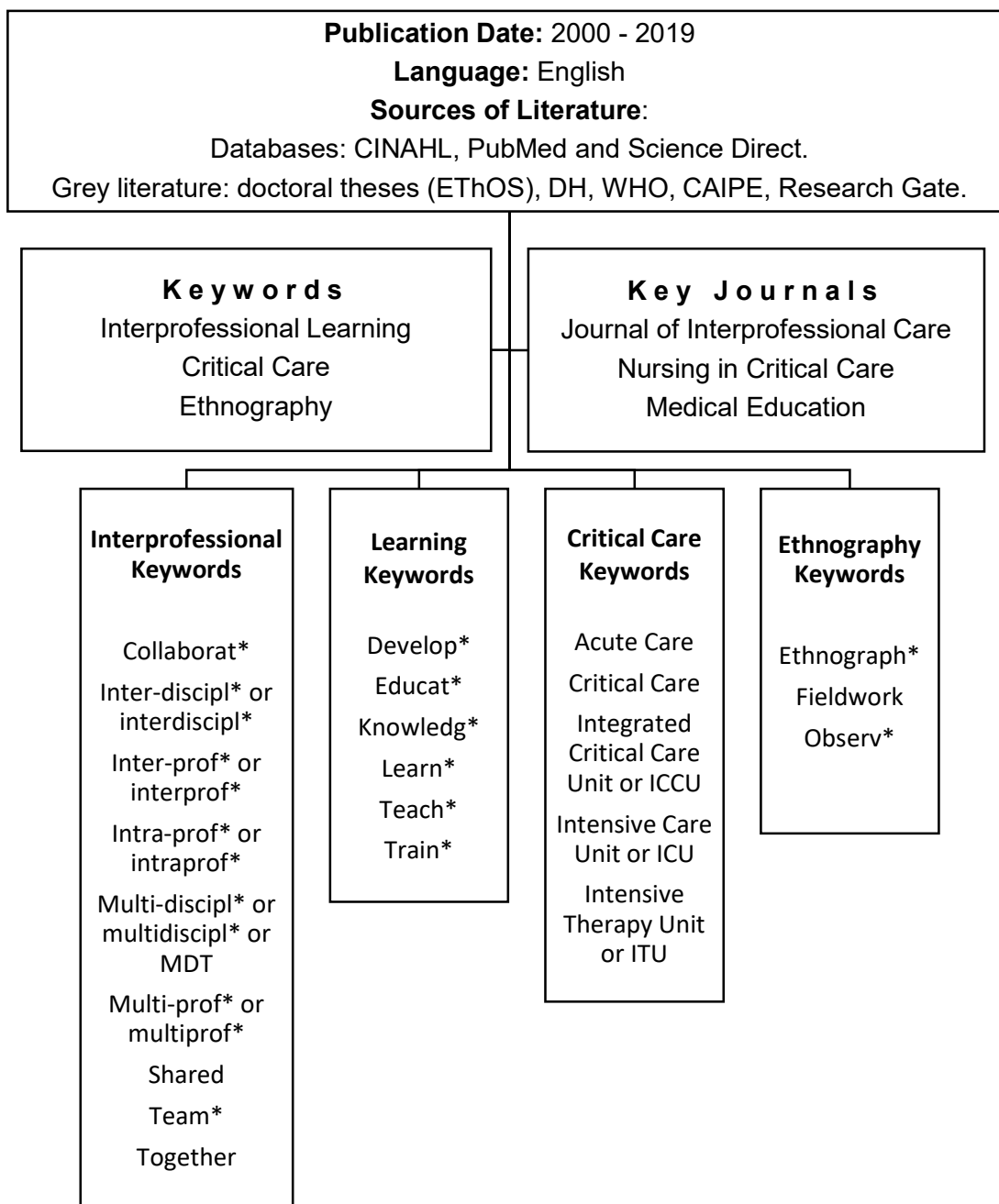


Figure 2.1 Literature search strategy

2.4 Interprofessional Approaches in Critical Care

The literature reviewed supports collaborative interprofessional practice and the development of specialist knowledge and skills in adult critical care. Critical care is

described as an environment with frequent complex IPC (Lingard *et al.*, 2004; Rose, 2011). The contemporary nature of critical care, demands a team approach and collaboration is a key underpinning concept to interdependent practice in critical care (Coombs, 2003). Wagter *et al.* (2012) argue it is possible to find out about informal IPL in critical care because it is an active complex environment, with a strong need for collaboration between professions.

Poor IPC can adversely affect patient care (Reeves *et al.*, 2017) and Reeves *et al.* (2013a) and Dietz *et al.* (2014) state that IPC and teamwork is crucial in critical care. Paradis *et al.* (2014b) claim that IPC is key for patient safety and quality improvement in critical care, yet there is limited insight into the nature of IPC in this environment. This view is shared by Ervin *et al.* (2018), who state there is little understanding about teamwork in critical care, despite increasing reliance on interprofessional teams.

The intensive level of patient care, creates regular interactions between different professionals, and literature claims that this demands effective collaborative practice and learning between staff. Ervin *et al.* (2018) associate existing research into collaboration in critical care with psychological safety, clarity with professional roles and leader inclusiveness within hierarchical, low temporal stability teams, to lower the ‘stakes’ for all whilst saving lives and providing high levels of critical care.

Ervin *et al.* (2018) refer to the work of Edmondson (2012) who advocates the need to create psychological safety for team members to promote effective learning and working within organisations. Edmondson cites barriers to team learning and working, a process referred to as ‘teaming’, as including interpersonal fear, power dynamics and

information hoarding. She advocates that leaders can overcome these barriers to sharing ideas and learning by promoting reflection and creating the psychological safety within teams that is required to overcome defensive interpersonal dynamics between team members. From this perspective, psychological safety is therefore a term which acknowledges the personal risks involved to individuals as they face fears of failure or apprehensions associated with exposing their gaps in knowledge in the process of learning within complex and flexible teams. Psychological safety provides learners with a non-threatening environment within which to learn and grow as individuals and team members. Ervin *et al.* (2018) suggest that leaders in critical care need to candidly discuss mistakes and challenges to create a culture which promotes candid communication about challenges, with no fear of retribution or consequence for highlighting potential practice problems or for speaking up to improve interprofessional interactions in daily practice, improving team functioning and health care in critical care teams that are highly hierarchical and low in temporal stability.

2.4.1 Nurse and Doctor Interactions

Nurse and doctor interactions in critical care are described as influential on IPC. These relationships are complex (Northway & Mawdsley, 2008), the most frequent of interprofessional interactions (Reeves *et al.*, 2015) and essential in the acute and complex care environment (Coombs & Ersser, 2004). Power relations between nurses and doctors have been linked to barriers in collaboration (Coombs, 2003; Coombs & Ersser, 2004; Durham & Hancock, 2006; Ervin *et al.*, 2018; Manias & Street, 2000a). Durham and Hancock (2006) suggest that whilst nurses have become more assertive, educated, and competent, unequal power relations persist between nurses and doctors, and healthcare organisational culture perpetuates this further.

Australian authors, Manias and Street, used critical ethnography to explore nurse and doctor interactions in critical care and produced several publications reporting that power relations between nurses and doctors influenced professionals' relationships, communication, and knowledge (Manias & Street, 2000a, 2000b, 2001a, 2001b). Doctors and nurses took different approaches to inform and legitimise their knowledge; for example, nurses used policies and protocols to assert power and to resist against doctors, whereas doctors regarded their professional authority and autonomy in higher esteem than guidelines (Manias & Street, 2000b). A study by Lingard *et al.* (2004) also identified the negotiation of power between nurses and doctors in critical care. Participants identified two mechanisms relating to collaboration: the 'perception of ownership' and the 'process of trade'. Perception of ownership was associated with how power and commodities, such as specialist knowledge and technical skills, were owned, transformed, and exchanged with others. The exchange was viewed as a process of trade to negotiate individual and collective professional goals during interprofessional interactions, when collaboratively caring for critically ill patients.

Coombs (2003) conducted an ethnography in England and revealed conflict between nurses and doctors during patient management discussions. Conflict was strongly driven by medical knowledge and authority, resulting in tension between nursing and medicine. Conflict arose due to medical hegemony, with medicine dominated decision-making, undervaluing the nursing role and authority to influence the decision-making process, detrimentally affecting the quality of team decision-making and interprofessional working in critical care (Coombs & Ersser, 2004). Reeves *et al.* (2015) also found that medical dominance and traditional hierarchies affected collaboration during interprofessional conflict, suggesting the persistence of

hierarchical barriers to IPC in critical care. An exception to this occurs during emergencies and patient crises. All critical care staff recognise the need for hierarchical collaborations during crisis resolution; however, expectations remain relating to interprofessional behaviour and etiquette to avoid interprofessional conflict (Piquette *et al.*, 2009).

Studies presented ward rounds and handovers as regular opportunities for IPC, and any resultant decision-making was influenced by the nurse and doctor relationship. Dietz *et al.* (2014) found that rounds were the most common collaborative task identified in the critical care team and Ervin *et al.* (2018) describe the daily ward round as the ‘foundation’ of critical care team collaboration and decision-making, claiming that rounding processes are when critical care teams are most ‘team like’.

Kendall-Gallagher *et al.* (2017) claim that critical care nurses perceived rounds as opportunities to learn, and to engage in interprofessional dialogues. Piquette *et al.* (2009) emphasise that the bedside nurse develops an expertise specific to their patient, and doctors and physiotherapists in their study recognised, respected, and valued nurses’ knowledge. Conversely, research conducted by Reeves *et al.* (2015) reports the exclusion of nurses from medical rounds, with variation in doctors’ value of the presence of the bedside nurse. Earlier research by Manias and Street (2001a) into nurse and doctor interactions during critical care ward rounds, reveal similar ‘barriers’ for nurse participation in decision-making, and doctors relied on nurses’ for additional details about patients. Professional differences that shaped IPC were also noted, with nurses favouring verbal handover, and doctors valuing written facts (Manias & Street, 2000a). The close working relationship between nurses and doctors, and differences in approach, can influence levels of IPC in critical care.

Research into interprofessional critical care ward rounds reveal the complexities of collaboration. Despite commitment from professionals to engage with interprofessional rounds, barriers and conflict persist (Paradis *et al.*, 2016). Manias and Street (2000a) conclude that opportunities exist for increased nurse participation in ward rounds if different views about the ward round process are challenged. Van den Bulcke *et al.* (2016) emphasise that good IPC and teamwork requires good communication, and that authoritarian decision-making prevents nurses and other professions from ‘speaking up’ when problems occur. They advocate all professionals should participate actively with decision-making in critical care. Ervin *et al.* (2018) argue that establishing ‘psychological safety’ to contribute to problem solving and collaborative decision-making improves critical care functioning. The evidence base regarding ward rounds in critical care presents positive exemplars, as well as constraints to IPC. Richer insight into the context of critical care practices is warranted to understand the realities of collaborative interprofessional practice in critical care.

2.4.2 The Critical Care Team

Interprofessional teams in critical care comprise staff from differing professional backgrounds and their interactions affect collaboration and teamwork. A contested area in the literature concerns the definition of the critical care team. Ervin *et al.* (2018) consider two extremes: an inclusive definition that defines the critical care team as containing all critical care staff involved with patient care, and a prescriptive definition characterising the team as two staff working together to care for the patient. Perhaps more pertinent, is the concept that the critical care team is transitory (Ervin *et al.*, 2018), and regarded as complex and fluid, with professional involvement being continuously negotiated (Hawryluck *et al.*, 2002). Alexanian *et al.* (2015) emphasise that a singular notion of the critical care team does not reflect the way interprofessional

work happens and is therefore too reductive. Lingard *et al.* (2004) attest that the concept of the critical care team is greater than the rhetoric of cooperation, and a more authentic representation of critical care teams reflects the skills and strategies needed for interprofessional teams to work in the competitive environment. Hawryluck *et al.* (2002) indicate fluctuations in the cohesion between team members, dependent upon degrees of collaboration and conflict, and found that six ‘catalysts’ were associated with these fluctuations: authority, education, patient needs, knowledge, resources and time. The generation and sharing of knowledge, and developing skills through education, are linked to IPC, shedding light on the need for increased understanding of the context of IPL in critical care (Hawryluck *et al.*, 2002).

Critical care teams are additionally challenged because the ‘tasks’ undertaken are longer in duration than the life of each team (Ervin *et al.*, 2018). Critical care teams are therefore considered to lack temporal stability; the identity of team members change daily but remain effective because each member shares specialist knowledge and has shared role expectations (Alexanian *et al.*, 2015). Ervin *et al.* (2018) discussed the unique characteristics of critical care teams, identifying the need for effective communication, interprofessional trust in others’ knowledge and skills, and balanced leadership, with a culture open to discussing and learning from mistakes, by balancing authority and inclusiveness. Their findings intimate a relationship between critical care teams and IPL culture, and indicate some optimal conditions for the effective critical care team to share knowledge and learn from practice experiences (Ervin *et al.*, 2018).

The literature suggests the successful collaborative team, with a wide remit of professions caring for critically ill adults, has clearly defined roles. Focus groups were

used by Lingard *et al.* (2004) to explore how critical care team members interacted to meet practice goals, to define professional boundaries and manage system issues that were complex. Effectively caring for the critically ill patient was influenced by the technical and non-technical skills of the critical care team, as well as the capacity for team working in the environment. Limited understanding of the team and lack of recognition of the uniqueness of professional roles is linked with increased team tension (Hawryluck *et al.*, 2002). When professional responsibilities overlap in critical care, this has been negatively associated with collaboration (Coombs, 2003; Hawryluck *et al.*, 2002; Stein-Parbury & Liaschenko, 2007). Humphris and Hean (2004) claim that changes in professional role boundaries result in overlaps of activity and interconnections between professions, and to deliver patient centred care (PCC), they attest that professions cannot be isolated or become territorial. Burford *et al.* (2013) view the professional socialisation of doctors by learning from nurses how to conform to their structured roles. They view the process of ‘socialisation as interaction’, explaining the way that professional roles are constructed through interactions and discourse with others. Therefore, the literature exploring professional roles within the critical care team acknowledges boundaries and overlaps between professions and indicates the importance of socialising staff into their respective professional remits to function effectively as critical care team members.

Essentially, critical care staff need to learn balance between independent and collaborative responsibilities, to develop professional integrity and to negotiate the ‘shifting tides’ in the team (Hawryluck *et al.*, 2002). Realisation of the contemporary roles and knowledge held by each profession, and acknowledgement of all individuals’ contribution to critical care, was deemed as a means of transforming the inclusivity of the culture by Coombs and Ersser (2004) in the pursuit of collaborative critical care

practice. The boundaries of professional roles are distinguished by professional jurisdictions. D'Amour and Oandasan (2005) state that professions are fragmented by knowledge that is profession-specific, and professional jurisdiction and scope of practice is possessed by each profession. They refer to 'interprofessionalism' as the collaborative and cohesive emergence of interprofessional practice in healthcare, claiming that professional dynamics are of equal importance to the context of collaboration. Literature supports the prospect of individual professions retaining scope of their professional role, and IPC is influenced by the blurring boundaries between professions.

Supportive evidence continues to accrue, and of the papers reviewed in relation to interprofessional approaches in critical care, it is apparent that critical care staff work in a complex environment and within fluctuating teams of different professionals. Whilst interprofessional conflict exists, the unpredictable nature of critical care provision requires staff to collaborate quickly and effectively as patient needs demand. However, further exploration of socio-cultural processes is needed to understand the context of daily interprofessional collaborative practices in critical care.

2.5 *Learning in Critical Care*

Literature relating to learning in critical care is sparse. Cooper *et al.* (2001) claim that, despite increased enthusiasm for multidisciplinary learning in health professional education, few attempts have been made for this type of learning to take place within the clinical environment. Whilst research into interprofessional informal learning in critical care is largely underwhelming, as a central concept, an abundance of research explores learning in the workplace. The need for knowledgeable critical care staff is

widely acknowledged, but current evidence lacks contextual insight into the processes relating to learning specifically within critical care.

2.5.1 Workplace Learning

Boud and Middleton (2003) purport that learning at work accounts for a large proportion of adult lifelong learning. Professionals interact, formally and informally, to discuss their practice to build work related knowledge and modify their practices (Soubhi *et al.*, 2009). Swanwick (2005) claims the workplace shapes learning activities that are unintentional and intentional through participation behaviours. Nisbet *et al.* (2013) agree that workplace learning rarely occurs in isolation and informal workplace IPL can improve the quality of patient care in the following ways: innovation, practice improvement, improvement in performance, patient safety, working together, and better patient outcomes.

The UK government previously highlighted the importance of developing and investing in the skills of the National Health Service (NHS) workforce (DH, 2008b). However, formal training can be expensive, with limited assurances of knowledge retention and skill development (Conlon, 2004). Costs associated with staff attending continual professional development (CPD) programs, presents workplace learning as an alternative cost effective means for IPL (Nisbet *et al.*, 2013). More recently, the Royal College of Physicians (RCP) published a resource to create and promote learning in modern healthcare (RCP, 2018). They identify eight ways to maximise learning: target time, utilise brief learning moments, learn while with patients, learn by caring, practice to make progress, share professional experiences, embrace technology-enhanced working and learning. In the current financial climate, when

limitations are placed on training and educational opportunities, it is imperative to ensure health professionals continue to develop their skills and learning within the workplace.

Le Clus (2011) notes the potential for continuous workplace learning through formal training and informal opportunities that are part of daily working practices. Nisbet *et al.* (2013) explain the term ‘workplace learning’ captures all staff as learners, and learning is shaped by individual, patient, and organisational needs, as opposed to educational curricula. Literature reveals that learning processes are multifaceted, and the term ‘informal’ at its simplest, is contrasted against definitions of formal learning.

The body of literature reviewed, delineates informal learning as learning which is unplanned and takes place outside of a structure. For example, Marsick and Watkins (2001) refer to the lack of external facilitation or structure. Eraut (2000) considers the term informal as a colloquial and wide-ranging category used to describe any type of learning taking place outside of formally organised activities and prefers the term ‘non-formal’ learning to describe learning that is not formal. His typology of non-formal learning presents three components: implicit learning, reactive ‘on-the-spot’ learning and deliberative learning.

Nisbet *et al.* (2013) reject the term ‘serendipitous’ workplace learning, due to its emphasis on learning by chance. Instead, they proposed a continuum of intentionality in informal workplace IPL, ranging from implicit unplanned learning, to deliberate and explicit learning as a central tenet of daily work. Workplace learning as a generic term

encapsulates a diverse range of opportunities, including IPL, where learning processes, intentions and practices are complex and heterogeneous.

Interprofessional challenges in healthcare learning arise with varying world views that different professions assume. All health and social care professionals develop their own culture, language, knowledge and skills (Wilhelmsson *et al.*, 2012). Clark (2006) explains that doctors, nurses, and other healthcare providers have been socialised into the worldview that is characteristic of their healthcare profession. On completion of professional training, individuals have assumed an occupational identity through educational and socialisation processes, reinforcing the professions unique world view (Hall, 2005). Professions are constructed into communities through the socialisation of thinking and behaviour patterns intrinsic to each discipline, ultimately sharing the same worldview (Clark, 2006). Bell *et al.* (2016) agree that professional identity evolves when individuals interact in a group they want to join. The historic development of professions has involved the generation, definition and defence of certain types of complex knowledge (Clark, 2006). Nurses are key to the socialisation of doctors entering the profession, and through informal workplace learning they learn about professional roles and behaviours (Burford *et al.*, 2013). Swanwick (2005) argues that taking the learning climate into consideration could enhance the integration of individuals into a particular culture. To learn together in the workplace, it would appear that different professional world views need to be assimilated.

Eraut (2004) identifies four work activities that enable learning: participation in group activities, working alongside others, tackling challenges and working with clients. Based upon these, Swanwick (2005) claims that learning arises from participation in

experiences, and the transition from peripheral to full participant in the professional field, with regards to theories of legitimate peripheral participation (LPP), is reflected in individuals' proficiency to manage situations as they arise in practice. Clark (2006) emphasises that knowledge is created in the social interactions between team members, when their understanding contributes to the process of learning for others. Workplace learning often occurs through interactions via networking or seeking out experts to share knowledge, and learning is tacit and situated within social contexts (Le Clus, 2011). Workers and organisations may be unaware of learning experiences in the workplace and exploring how learning occurs contributes to the wider debate surrounding learning at work (Le Clus, 2011). Kvan (2013) discusses workplace learning within health care environments and emphasises that tacit knowledge is informally passed along, underpinning competitive differentiation and innovation within corporate workplaces. This indicates that learning is affected by workplace design and this affects opportunities for tacit learning between professionals, who have different roles, differing competitive goals, affecting innovations in professional practice.

2.5.2 Learning in Social Contexts

Over time, when professionals balance what they know and do, the group can collectively integrate their learning (Soubhi *et al.*, 2009). Nisbet *et al.* (2013) state that learning is enhanced by interacting with others and learning in social contexts, therefore socio-cultural learning theories extend consideration of learning beyond the individual learner. Learning in healthcare practice has been widely associated with socio-cultural theories and situated learning (Barr, 2013; Burford *et al.*, 2013; Hoffman & Donaldson, 2004; Howkins & Bray, 2008; Hutchings *et al.*, 2013; Le Clus, 2011; Swanwick, 2005; Wagter *et al.*, 2012). Socio-cultural theories, developed by Lave and

Wenger (2008), refer to situated learning; where learners participate within a CoP and learn through positioned interactions with others in the social context of the group through a process of LPP. For example, Burford *et al.* (2013) found that newly qualified doctors learned from nurses through authentically informal and situated learning in the workplace. Situated learning focuses on the interactions between workers and their environment, and the construction of knowledge within the social context (Le Clus, 2011).

CoP refers to the context where situated learning occurs (Barr, 2013). Interactions between professionals in practice can be viewed as social activities and Wenger (2008) views learning as social participation. Therefore, CoP challenges concepts that consider learning exclusively as a cognitive process and instead, learning is viewed as integral to practice and is context driven (Wenger *et al.*, 2002). Swanwick (2005) supports this in claiming that informal learning in medical education adopts cognitive approaches, with the mind viewed as independently processing information, rather than considering socio-cultural perspectives on informal learning and focusing on how cultural settings develop the mind.

Three characteristics of CoP are identified: a shared focus, a shared body of knowledge, and members mutually engaged in activities and knowledge sharing (Wenger *et al.*, 2002). Regarding IPE, Barr (2013) proposes that situated learning resonates with professions assuming experience-based learning approaches, rather than scientific, and this suggests the concept of CoP extends beyond workplace IPL.

LPP further extends from the concept of CoP. Hutchings *et al.* (2013) note that group processes and interactions are valued for social learning, and learners situated at the periphery of a CoP develop their IPL, thereby aligning themselves at different ‘zones of practice’ based upon their experiences and background. LPP is considered a learning theory which is a dimension of social practice, and this socio-cultural theory resounds with social constructionism (Lave & Wenger, 2008). Hutchings *et al.* (2013) agree that socio-cultural theory is closely linked to social constructivist learning theory, particularly the zones of proximal development, which Vygotsky described as the distance between individuals actual and potential development, and the role of seeking more knowledgeable peers to bridge the distance. Social constructionism is discussed further in section 3.2.2 *Social Constructionism*.

Socio-cultural theories of CoP, LPP and situated learning are pertinent to the context of this research; they account for the ways groups of people, with shared interests or goals, regularly interact to deepen knowledge and expertise through a process of collective learning (Wenger *et al.*, 2002). These theories offer a lens to view the social phenomena of IPL, as professions learn through social interactions within a CoP.

2.5.3 Critical Care Knowledge

Hancock and Durham (2007) emphasise the importance of knowledge development to underpin critical care practice and categorised the following knowledge types: evidence derived, practical, intuitive, tacit, and reflective. The concept of ‘real’ knowledge is complex, and adoption of positivistic paradigms in healthcare conflict with the humanistic philosophy, subjective meaning and realities of critical care practice (Durham & Hancock, 2006). To gain realistic insight into the development of

knowledge within individuals in the critical care team, researchers need to be open in their approach to reflect the realities of practice learning.

Critical care knowledge can be viewed collectively as the sum of knowledge within the interprofessional team. Each clinician in critical care holds a diverse range of knowledge (Ervin *et al.*, 2018). Critical care nurses, advanced practitioners, physiotherapists and intensivists (doctors) have unique levels of expertise (Donovan *et al.*, 2018). Differing knowledge levels and alternative perspectives can help critical care teams to meet the complex diverse needs of critically ill patients and families (Donovan *et al.*, 2018). In addition to improving the quality of care, Ervin *et al.* (2018) caution that differing knowledge levels between professionals can potentially create interprofessional conflict, leading to ineffective relations between staff.

Research has been undertaken to explore profession-specific knowledge considering perceptions of knowledge in critical care with physiotherapists (Miller *et al.*, 2005), doctors (Swanwick, 2005; Tallentire *et al.*, 2011) and nurses' (Copnell, 2008; Huggins, 2004). Nurses and doctors have been identified as learning differently, following distinct patterns of professional development (Hansen & Severinsson, 2009). It is worth noting that the healthcare assistant (HCA) role is under-researched within the literature, and Huggins (2004) claims there is limited discussion regarding the professional development and learning of post-registration intensive care (adult critical care) nurses, and of informal learning in critical care.

Experience 'on the job' is identified as core to critical care knowledge. Miller *et al.* (2005) recognise that physiotherapists learn from interprofessional team members in

terms of understanding professional roles and emotional support. Whereas, Swanwick (2005) claims the medical profession learn predominantly at, through or from work, and doctors revealed the intricacies of critical care learning by describing challenges they encountered and the thought processes involved in complex activities such as decision-making. Challenges to learning in critical care have been indicated by physiotherapists as including difficulties with time management and emotions (Miller *et al.*, 2005). Challenges faced by junior doctors include their operation in professional silos (Tallentire *et al.*, 2011) and, in doing so, this negates the role of the interprofessional team to facilitate their adjustment to working in the critical care team. Literature generally overlooks the role that IPL can assume in developing knowledge and skills in the critical care team.

Studies have found that professional status and positioning of nurses and doctors within critical care influence knowledge and practice. Whilst junior doctors were preoccupied with their position within medical hierarchies and others' expectations of their competence in critical care (Tallentire *et al.*, 2011), critical care nurses were more concerned by others' perceptions of their knowledge base (Copnell, 2008). Copnell's (2008) research explored knowledgeable practice as core to nurses' identity and practice. She contests previous literature which claims that knowledge empowers nurses, and instead found that nurses were positioned as knowledgeable by colleagues. The nurse position as being knowledgeable changed dependent upon other's perceptions, and they were regularly undermined by nurses and doctors in relation to power dynamics, making it difficult to maintain a knowledgeable reputation; nurses were assumed as 'ignorant' until proven otherwise by their colleagues. Hansen and Severinsson's (2009) research found that critical care nurses explained how doctors who were unfamiliar with their skills would prevent them from weaning patients and

nurses expressed a desire to engage in interprofessional discussions so they could practice and improve how they verbalised their tacit knowledge and skills to team members with the goal of improving patient care. Perceptions of knowledge, and being reputable as a knowledgeable practitioner, appear to be valued by critical care staff, and the time and energy invested to maintain professional status and reputation suggest that staff manage their behaviour during IPL processes to project impressions of themselves as knowledgeable to their peers.

Munro and Savel (2014) assert that clinical knowledge and effective healthcare teams enhance the quality of PCC for critically ill patients and families. Continual development of professional knowledge and expertise of critical care staff is required, and for IPL, this knowledge needs to be shared with others. Based on the tacit, subjective and personal knowledge assumed by individuals, co-worker interactions are significant to the acquisition of new knowledge and skills in teams (Le Clus, 2011).

Rose (2011) refers to the ownership and possession of professional knowledge when working collaboratively within critical care. At the interface of countless interprofessional interactions, with many professionals possessing specialist critical care knowledge, the potential for learning opportunities and sharing expert knowledge is substantial. This subsequently presents an environment rich in opportunities to observe and further explore interprofessional interactions and IPL.

The assumption that expert practitioners readily engage in IPL in critical care is challenged. Those with more experience will not necessarily perform competently in practice (Whyte *et al.*, 2009). Working within 'knowledge-rich' environments does

not guarantee acquisition of new knowledge (Jackson, 2011). Storesund and McMurray (2009) found possession of knowledge is insufficient; the nurse needs to interpret and use knowledge in appropriate situations. Essentially, the development of critical care knowledge is limited when knowledge is retained and not shared.

2.5.4 The Critical Care Learning Environment

Research indicates the knowledge of staff is influenced by environmental context. The literature reviewed presents the critical care environment from several perspectives: considering the nature of critical care work in terms of social and cultural factors, in view of management and organisational leadership, and as a physical environment. Evidence relating to the critical care learning environment is limited and the paucity of literature is stressed by Paradis *et al.* (2014a) and Muldowney and McKee (2011).

Huggins (2004) suggests in critical care there are skills that can only be learnt in the workplace, and formal education needs to be consolidated in a supportive practice learning environment. Muldowney and McKee (2011) refer to critical care as a demanding clinical environment and Wagter *et al.* (2012) emphasise that the potential of this environment to share interprofessional knowledge comes from professionals working closely together in an active environment, where high levels of complex care create a strong need for IPC. The nature of critical care is therefore complex and demanding and the critical care learning environment, whilst regarded as ‘good’ (Muldowney & McKee, 2011), needs to be further understood.

Skule (2004) developed a framework of learning conditions to measure and assess workplace learning environments (figure 4.2). He argues that informal learning cannot

be measured by traditional educational indicators or with conceptual learning theories but universal factors applicable across disciplines that lead to learning in ‘learning intensive work’ should be measured. The framework was used to structure observations within the current research (see chapter 4: *Research Methods*).

The ‘learning intensive’ environment of critical care has been described by Marsick and Watkins (2001) as occurring at levels of the individual, team and organisation. In critical care, practitioners develop their knowledge and skills, although challenges to informal learning occur due to patient needs, time pressures and individual conflicting priorities (Hoffman & Donaldson, 2004). The shared goal of providing effective and timely care to critically ill patients, requires an interprofessional collaborative effort to learn. Marsick and Watkins (2001) emphasise that to achieve collaborative action, the team needs to mutually construct knowledge and Hoffman and Donaldson (2004) claim that time-sensitive learning is needed to efficiently resolve patient problems. From these perspectives, the environment is viewed in relation to the people and systems operating within it.

Le Clus (2011) explains that the social and cultural environment influences the nature of informal learning and the way learning happens. Interpersonal relationships between critical care staff are linked to good clinical learning environments. Muldowney and McKee (2011) expand upon these relations in their research of new nurses’ perceptions of critical care as a learning environment; ‘good interpersonal relationships’ were formed when staff were approachable and answered questions. Hoffman and Donaldson (2004) recognise the value of interprofessional feedback and contributions to critical care learning, describing the 360° learning process, where IPL

occurs and shapes the learning patterns in the critical care workplace. The people within a learning environment are fundamental to the levels of learning that transpire.

Suter *et al.* (2012) claim that IPL environments should be studied from sociological and management perspectives. Research into clinical learning environments by Laksov *et al.* (2015) found that leadership was an essential part of the system. In research by Muldowney and McKee (2011), satisfaction with the learning environment was associated with support and commitment from clinical managers and educational staff, achieved through empowering staff to gain access to wide learning experiences and giving opportunities to engage with learning in a supportive team. At an organisational level, learning is described by Marsick and Watkins (2001) to be knowledge embedded in the systems and processes of the organisations 'products and services'. Tallentire *et al.* (2011) note that doctors' behaviour within the critical care hierarchy was influenced by environmental factors that were situational, organisational, and cultural.

The physical environment of critical care in terms of learning is poorly researched. Swanwick (2005) considers the learning environment in terms of the development of educational activity. Regarding IPL, Kitto *et al.* (2013) stipulate that space and place provide conditions for IPL to occur, while Gregory *et al.* (2014) warn that failure to consider environmental space in relation to IPL in the workplace may prevent understanding and engagement. Evaluating learning environments is complex, with no simple correlation between learning outcomes and space (Kvan, 2013).

Overall, literature provides limited insight to describe the physical attributes of effective clinical IPL environments. Kvan (2013) is the exception to this and presents a comprehensive review of the ways in which the learning environment can support IPL, claiming that the literature already supports the influence of the environment on the quality of patient care. Kvan outlines the following environmental factors as influential to IPL: light, temperature, ergonomic comfort, noise, and space and construction quality. Generally, the literature suggests the optimal learning environment facilitates learners to acclimatise, to connect learning to the context of patient care and to progress along the novice to expert continuum as they become ‘enculturated’ into the healthcare environment (Hoffman & Donaldson, 2004). Within the current ethnographic research, the environmental context, and its influence on IPL in critical care is captured with rich description.

2.6 *Interprofessional Learning in Adult Critical Care*

A relationship between IPC and IPL is clearly explicated in the literature reviewed. Eraut (2007) claims that increasing opportunities for consulting and working alongside other teams enhances the quantity and quality of workplace learning. Burford *et al.* (2013) emphasise that research often considers the relationship between medical and nursing professions in the clinical workplace, but doctors learning from others is not widely acknowledged. The RCP (2018) recognise the shift from traditional medical models of learning, emphasising the potential for doctors to learn interprofessionally, with and from other professions, whilst still retaining mentorship and supervision with medical peers.

Bell *et al.* (2016) articulate the difference between collaboration and IPL, by emphasising that group working is not the same as team learning. There is currently limited insight into health professionals learning informally and collaboratively, as part of the interprofessional team in healthcare, especially within critical care. Sheehan *et al.* (2017) propose that the contexts of clinical areas, such as intensive care units, could be the focus of future study about clinical learning environments. Therefore, this thesis contributes knowledge to address the void in the current evidence base.

Early research into IPL focused on collaboration between professions, and tensions persist relating to the time to introduce IPL into healthcare, in terms of pre-registration or post-registration training (Humphris & Hean, 2004). IPL has been linked to professional and organisational socialisation (Miller *et al.*, 2005), and the formation of professional identity is part of this ongoing debate. Further research into IPL in critical care is justified by changes in acute hospital practice, which mandate the need for IPC (D'Amour *et al.*, 2005).

Few studies explicitly explore IPL within adult critical care. The nature of social interactions during IPL in the acute care environment have been researched by Wagter *et al.* (2012) and Bell *et al.* (2016). Social interactions between critical care professions were a means of seeking interprofessional knowledge (Wagter *et al.*, 2012), and observing these interprofessional interactions revealed shared meanings and experiences in the interprofessional groups (Bell *et al.*, 2016). Learning to make interprofessional decisions is facilitated through IPC and IPE strategies (Conte *et al.*, 2015). Interprofessional dialogues were associated with recognising patterns of interprofessional interactions, learning and reflection, and provided opportunities for

professions to conceptualise and articulate their knowledge to others in the critical care team (Hansen & Severinsson, 2009). This knowledge could be used to interprofessionally problem solve, manage critical patient situations and benefits the quality of patient care (Storesund & McMurray, 2009).

Interprofessional interactions are fundamental for IPL to occur. These interactions create opportunities for learning from others through experience and teaching from experienced staff (Storesund & McMurray, 2009). Wagter *et al.* (2012) reveal variation in IPL levels between hierarchies and levels of expertise; nurses and doctors were observed as having limited IPL engagement. This can be partially explained by Hansen and Severinsson (2009) who cite differing learning needs between nurses and doctors; doctors want time for knowledge transformation, but nurses want interprofessional discussions to share interprofessional knowledge and experiences.

Time constraints in critical care create a barrier to IPL (Hansen & Severinsson, 2009; Storesund & McMurray, 2009), and organisational constraints, such as staff shortages and shift rotations, present additional IPL challenges (Storesund & McMurray, 2009). For IPL to occur, interprofessional interactions need to be meaningful and have relevance (Bell *et al.*, 2016) and challenges include the silent professional during interactions and interprofessional conflict (Conte *et al.*, 2015). Interactions need to overcome interprofessional and intraprofessional expectations (Bell *et al.*, 2016) and the research data presented by Conte *et al.* (2015) indicates the presence of power dynamics between nurses and doctors learning together, with conflict and power exchanges evident during critical care decision-making processes.

In addition to the barriers identified, these studies suggest factors that enable IPL in critical care. Learning at the bedside was perceived to be the best way to gain interprofessional knowledge in critical care (Hansen & Severinsson, 2009). Interprofessional teams that functioned well in acute care understood team and individual goals (Bell *et al.*, 2016). IPL in critical care was further promoted by using protocols to guide interprofessional interactions that enabled questioning, explaining, and debating clinical decisions for critical care patients (Hansen & Severinsson, 2009).

2.7 Educational Theory

The social and interactive nature of IPL reflects several theories of learning. The literature reviewed on workplace learning and IPL links to a number of these, and the interprofessional field is now abound with theories, whereas it was previously regarded ‘atheoretical’ (Hutchings *et al.*, 2013; Reeves & Hean, 2013; Suter *et al.*, 2012). Clark (2006) advocates the use of theoretical frameworks to advance research and practice with IPE and claims the focus of theory should be on helping professions to understand the profession-specific world views held following socialisation into each profession. The application of theories can be used to explain findings from interprofessional research, to generate complex and comprehensive understanding of cultures, organisational functions and individual interactions that are difficult to explain (Reeves & Hean, 2013). In this current research, literature in the interprofessional field that applied theories to research informed the development of the conceptual framework for IPL, discussed in section 3.3 *Conceptual Framework*.

Barr (2013) highlights that theories relevant to IPL are largely drawn from education, psychology and sociology, and they inform and challenge boundaries of the

interprofessional process. Suter *et al.* (2012) had previously advanced this observation, claiming that organisational and systems theories were underutilised in the interprofessional field. From the vantage point of medical education, Swanwick (2005) notes the complexity of learning in the workplace, emphasising the insufficiency of applying singular adult learning theories to encapsulate workplace learning (such as Bandura's role modelling, Schön's reflection and Kolb's experiential learning). Hutchings *et al.* (2013) echo this sentiment and developed a meta-theoretical framework, to focus on the praxis and reflexivity in IPE, linking to social-constructivist and situated learning theories. They advocate that to understand IPL, theories need to be associated with teamwork and group development, not on individual learners. Hean *et al.* (2009) adds that a range of educational theories can provide clarity to IPL, whereas a single theory cannot; for example, micro-level thinking about socio-cultural learning can lead to complex macro-level thinking regarding activity theory and CoP.

With regards to learning interprofessionally, Barr (2013) refers to multiple theories which can offer a theoretical framework to position IPE in terms of the IPL process and context; for example adult learning theory (experiential learning and reflection), psychodynamic theory, contact theory, identity theory, practice theory and situated learning. However, Nisbet *et al.* (2013) identify three theories relevant to informal workplace IPL: cognitivism, constructivism and transformative learning. They explain that cognitive approaches are used during problem solving and role modelling, that constructivism principles in interprofessional interactions reflect how health professionals learn from social interactions with patients, staff and situations, and transformative learning challenges thoughts, feelings, and practices of individual

learners. The range of these theories intimate the complexity of IPL, and further research is needed to situate IPL within theoretical frameworks.

Successful teamwork requires competent individuals, but complex patient care requires application of additional tools such as metacognitive structures (Wilhelmsson *et al.*, 2012). Interprofessional use of a metacognition model gives common tools to facilitate understanding and communication in the interprofessional team, based on higher order thinking and active control of cognitive processes crucial to successful learning (Wilhelmsson *et al.*, 2012). Swanwick (2005) associates cognitive processes of learning with theorists such as Knowles, Bandura, Schön and Kolb, where the mind is viewed as functioning independently to social contexts. He likens the traditional medical education approach of apprenticeship learning to cognitive learning processes. Hean *et al.* (2009) further supports these theorists, claiming with regards to IPL two key learning theories apply: behaviourism, focusing on behaviour representative of learning outcomes and competence, and constructivism, focused on the process of learning. These theories seek to understand learner behaviour during social interactions and individual learning processes as knowledge develops.

Theories that focus on teamwork and group development need to be embraced with IPL (Hutchings *et al.*, 2013); for example, CoP has additionally been associated with informal workplace IPL (Barr, 2013; Nisbet *et al.*, 2013; Swanwick, 2005), so learning at work can be viewed conceptually through CoP theory. However, Boud and Middleton (2003) argue that additional forms of conceptualisation are needed to capture communities that are less stable and loosely coupled forming a weaker CoP. Socio-cultural learning theories account for collaborative influences relating to IPL

concerning the workplace, its practices, history and culture (Nisbet *et al.*, 2013) and therefore provide an appropriate framework to explore IPL culture in critical care. IPL is complex and, when the focus moves from social situations towards organisational contexts, activity theory has additionally been associated with informal workplace IPL (Nisbet *et al.*, 2013). Activity theory and notions of expansive learning adopt an organisational perspective and focus on the social and organisational context (Boud & Middleton, 2003). Activity theory, argued as crossing practice boundaries, is considered more appropriate than CoP theory that is ‘well-bound’ (Boud & Middleton, 2003). The conceptual framework developed in the current research encapsulates the plethora of theory applicable to the interprofessional field (section 3.3 *Conceptual Framework*).

Clark (2006) emphasises the practicality of theory to integrate and explain knowledge, to predict the unknown and to develop interventions to address challenges. Applied to the current research, educational theory is helpful to understand and interpret the ethnographic findings. Whilst the thesis is viewed predominantly from a socio-cultural perspective, other theories were considered throughout the research, as illustrated in the conceptual map (Appendix 11) and in the conceptual framework (section 3.3 *Conceptual Framework*).

2.8 *Summary*

This chapter highlights shortcomings in existing literature pertaining to IPL in adult critical care. Bodies of literature are accumulating with regards to interprofessional approaches in critical care, learning in the workplace and with respect to theories in relation to IPL. Figure 2.2 summarises the focus of the current research, which resides at the intersection of these bodies of evidence. This thesis adds to the current evidence

base relating to IPL in adult critical care making an original contribution to knowledge in the fields of IPL, critical care, ethnography, and socio-cultural theory.

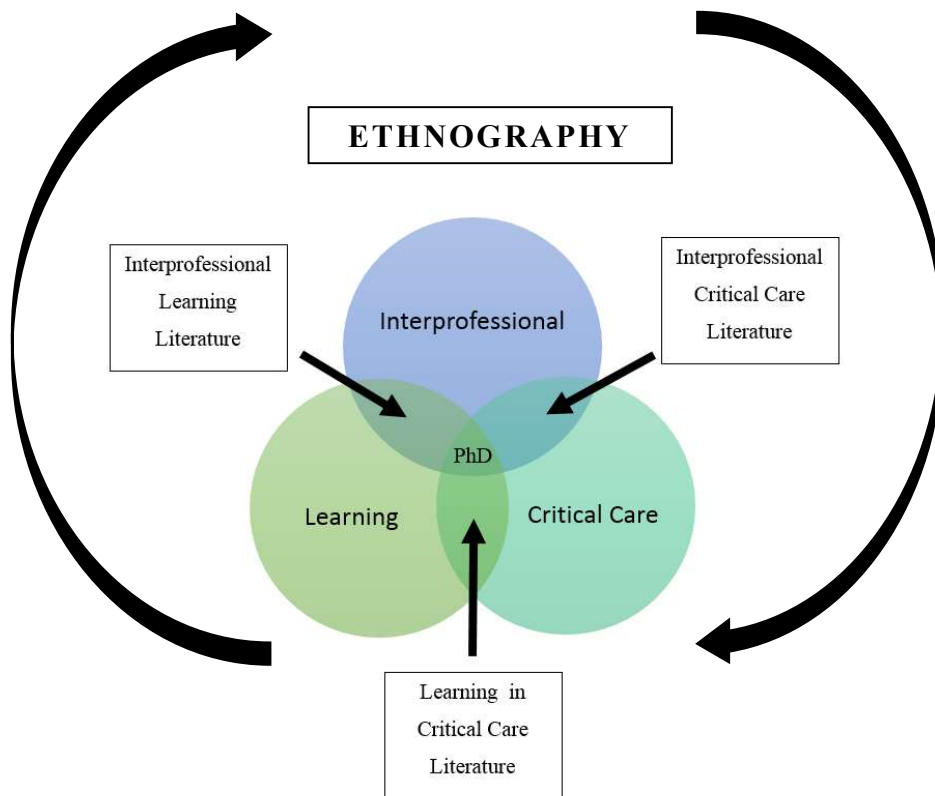


Figure 2.2 The doctoral research topic situated within existing literature

In summary, having reviewed the literature, although benefits have been attributed to IPC and workplace learning, research specifically on IPL within adult critical care is limited. Previous research has focused on hierarchies, power relations and staff interactions, often with limited interprofessional scope. The focus adopted in the current research addresses the dearth in literature and considers the context of IPL within the adult critical care environment with respect to the sharing of knowledge and expertise between critical care staff. Chapter three discusses the methodology of focused ethnography, and philosophically situates the research with respect to ontological and epistemological perspectives, presenting a conceptual framework to situate this research in the interprofessional field.

CHAPTER 3: METHODOLOGY

3.1 Introduction

This chapter frames the philosophical position of the thesis and describes the qualitative research methodology. An overview of ontological and epistemological perspectives is given, and the theoretical concept of social constructionism is explored. A conceptual framework is presented, informed by the literature underpinning the research. The trustworthiness of ethnography is discussed regarding the perceived transferability of findings and credibility of the research. The chapter concludes with discussion of the multiple research sites.

3.2 Philosophical Position

The thesis views IPL from the standpoint of social constructionism and socio-cultural learning theory (discussed in chapter 2: *Literature Review*), adopting an interpretivist perspective. Ontology is the philosophical study of the nature of being (Clark, 2006) and of what knowledge is (Bloomberg & Volpe, 2019). The ontological research question sought understanding of interprofessional staff in adult critical care, learning from and with each other, to shape their IPL experiences. Epistemology explicates how people know things (Bloomberg & Volpe, 2019), and Clark (2006) defines epistemology as the philosophical study of knowledge, concerning its nature, origin, methods and rationalisation. The subjective reality of IPL was explored by observing and talking with participants, as they shared their interpreted reality and knowledge relating to IPL in critical care.

3.2.1 *Ontology and Epistemology*

Braun and Clarke (2006) emphasise the importance of articulating theoretical positions within thematic analysis because of the assumptions relating to the researchers' world view and perceptions of reality. Similarly, Bloomberg and Volpe (2019) argue that ethnographers should be transparent about the epistemological position informing their work. Congruence is needed between ontology, epistemology and methodology because they influence methods of data collection and analysis in qualitative research (O'Reilly & Kiyimba, 2015). Axiological assumptions are concerned with values in research (Creswell, 2013) and this research situates values as subjective to participants and researchers. Reflexivity acknowledges assumptions relating to researcher's values and is integral to ethnography (Charmaz, 2014) and is associated with constructionism (Delanty, 2005.) Axiological assumptions are recognised by integrating reflexivity into research, examining the researcher's conceptual lens, explicit and implicit assumptions, preconceptions and values, and acknowledges their influence on research decisions in all phases of qualitative studies (Korstjens & Moser, 2018). Reflexivity is discussed in greater detail in section 4.4.10 *Reflexivity* and 10.1 *Researcher Reflections*.

The philosophical position in this thesis was decided following deliberation of my beliefs about the origins and construction of knowledge. Consequently, the research aims, and overarching question are informed by the philosophical lens of enquiry.

Table 3.1 indicates my philosophical beliefs based upon Creswell's (2013) four philosophical assumptions.

Table 3.1 Philosophical assumptions in the study (Creswell, 2013)

Philosophical Assumptions	Definition	My Beliefs	Aligned Theory
Ontological	The nature of reality.	There are multiple subjective realities.	Interpretive paradigm.
Epistemological	What counts as knowledge?	Participants socially construct knowledge.	Social Constructionism. Socio-cultural learning theory.
Axiological	The role of values in research.	Values are subjective to participants and researchers.	Reflexivity.
Methodological	The research process and language.	Inductive, context, emerging design (iterative).	Ethnography: context, culture and experience in the field shapes research.

Regarding epistemology and the theory of knowledge, my belief is that knowledge is constructed through individual perceptions, and there is not one absolute truth, but multiple versions of truth as understood by different individuals. This viewpoint resonates with Kant, who claimed when absolute knowledge is untouched by the external world it does not exist; conversely, Plato proposed that knowledge can be absolute when acquired through ‘pure reason’ (Schunk, 2009, p. 12). These differing perspectives regarding absolute truth, relate to how individuals internalise and construct their knowledge, reflecting differing philosophical assumptions associated with positivist and constructionist paradigms (Guba & Lincoln, 1994).

In seeking the truth, reasonable doubt should be applied and a working hypothesis should be developed; this philosophical perspective is shared by Protagoras and

reflects the relativistic theory of truth (Schunk, 2009). This idea of knowledge interpretation leads to complex philosophical questions, such as whether there can be different truths, and whether a theory can be true on its own terms, independent of others' interpretation. Even when something is measurable, such as temperature, there remains margin for human error in the reading, and it is probable that meaning differs between individuals (Guba & Lincoln, 1994). These are areas which Socrates explored in terms of false beliefs and judgements; where errors occur due to a person's knowledge and that often a rational account is required to confirm if individuals true belief is absolute (Schunk, 2009).

Believing that knowledge is subjective and socially constructed by individuals, situated my philosophical stance within interpretive schools of thought, particularly with social constructionism.

3.2.2 Social Constructionism

Swanwick (2005) describes social constructionism as knowledge inherent to cultures, where social meanings are formed by interactions in the community. Wagter *et al.* (2012) propose that knowledge is constructed socially, where reality and categories of knowledge are actively created through interactions and social relations. Social constructionism as an epistemology rejects the prospect of an objective truth waiting to be discovered; rather, it views knowledge as socially constructed, subjectively by individual's engagement with the reality of the world, and meaning is constructed from the individual interpretation of knowledge (Reeves *et al.*, 2013b). Social constructionism is therefore based upon the idea that the knowledge individuals hold, is constructed from social interactions and experiences. The idea of socially

constructing knowledge, where each individual's interpretation of knowledge differs, presents the idea that for individuals, multiple realities exist.

Within literature, the term social constructionism is often used interchangeably with social constructivism. Curtis and Pettigrew (2009) highlight that constructivism is an expansive and complex perspective, encompassing a range of disciplines, particularly psychology. Constructivism is an epistemology focusing on the social interactions that lead to learners constructing their own understanding of knowledge (Schunk, 2009), and Burr (2007) defines constructivism as a form of psychology which views learners as taking an active role to create their experience and associated meanings, whilst subjectively perceiving the world. She explains the terms social constructivism and social constructionism differ in relation to the extent the individual learner is viewed as an agent in control of construction, and the extent that constructions are produced from structural or interactional 'social forces'. Therefore, viewing IPL from a social constructionist perspective in this current research focuses on the knowledge that is produced through the social interactions that arise as members of a community of critical care practice.

Within healthcare, each healthcare professional's knowledge is generated uniquely (Donovan *et al.*, 2018), because of individual experiences being informed by existing evidence and profession-specific training. Social constructionism, as a philosophical perspective of knowledge, sits within an interpretive paradigm and is thereby subjective (Schunk, 2009). Ethnographers adopt a social constructivist approach, through the assumption that individuals create their own realities through interacting with others and their environment (Leslie *et al.*, 2014). With social constructionism,

knowledge is sustained by social processes, is linked with social action, is culturally specific and encourages a critical stance towards assumptions and taken-for-granted knowledge (Burr, 2007). To explore IPL culture, social constructionism is philosophically well-suited to underpin the research.

3.3 Conceptual Framework

Leshim and Trafford (2007) advocate conceptual frameworks to provide a theoretical overview of intended research, and to bridge paradigms that explain the research focus and methods adopted. Developing a conceptual framework in this research grounded the philosophical stance of this study and maintained research focus. Given the expansive range of theories applied to the interprofessional field, the literature points towards the consensus that singular theories are insufficient to comprehensively frame IPL. The conceptual framework developed in view of current literature views IPL as levels of learning (figure 3.1). The framework considers IPL from the social interactions between ‘actors’, and the learning processes and ‘activities’ occurring at levels of the individual, the team, and the organisation. IPL at the level of individuals, teams and organisations encapsulate numerous theories, presenting a comprehensive framework to understand IPL in the critical care context.

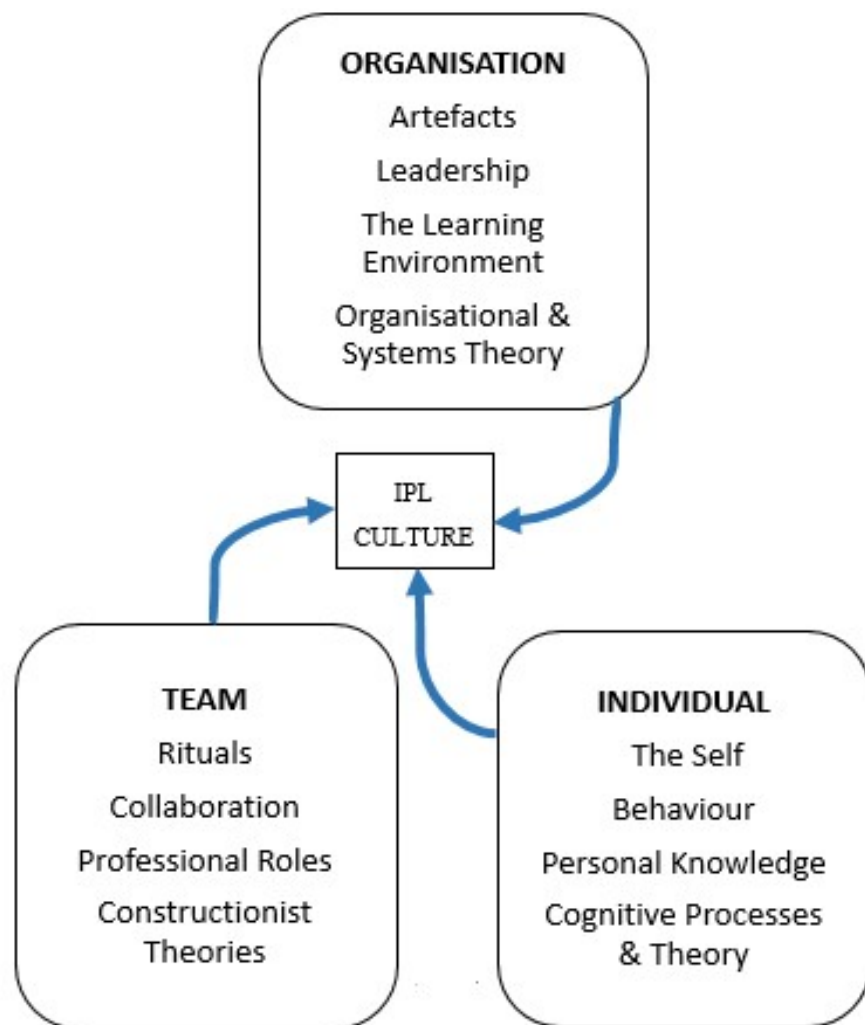


Figure 3.1 Conceptual framework for IPL culture in adult critical care.

Ethnographic accounts have theoretical components that illuminate, frame and explain phenomena being studied (Reeves *et al.*, 2013b). The conceptual framework developed from literature relating to this research therefore frames and explains the phenomena of IPL in adult critical care. Associated with ethnographic research, the framework considers the people being studied, their actions and reactions, and places (Reeves *et al.*, 2013b). This thesis and research design is influenced by the work of ethnographer James Spradley, and the conceptual framework acknowledges the ethnographer's focus on 'actors' and 'activity', within the natural environment being studied (Spradley, 1979, 1980). The staff (actors) in the critical care environment move

between learning (activity) in uniprofessionally, in teams and as part of a wider healthcare organisation. Within the framework, this is represented by the term's individual, team, and organisation. In seeking to understand the IPL culture in adult critical care, the activity of staff is viewed from each of these levels.

Marsick and Watkins (2001) previously suggested that more needs to be learned regarding the boundaries of learning at individual, team, and organisational levels. Levels of learning relate to the conceptual framework from the perspective of micro, meso and macro levels. Hean *et al.* (2009) describe learning at micro levels, where individuals learn, and macro levels, where learning happens at an organisational level. Hutchings *et al.* (2013) additionally refer to the term meso levels, which Suter *et al.* (2012) describe as relating to learning at a local level, between teams, information networks and local cultures. The metacognitive model for interprofessional competence constructed by Wilhelmsson *et al.* (2012) resonates with the conceptual framework, and facilitates description and analysis of professional competence at levels of the individual, team and organisation. The levels of learning presented in the conceptual framework therefore reflect the boundaries of learning across individuals, groups, and larger organisations.

3.3.1 Individual Level Learning

Within the conceptual framework, in relation to individual staff, consideration is given to the concept of the self, of staff behaviour, personal knowledge and cognitive theories that account for the ways that individuals learn. An assumption is drawn that every individual in critical care possesses personal knowledge (Munro & Savel, 2014). Learning at the individual level considers the way people make meaning, and gain

knowledge and skills (Marsick & Watkins, 2001). Learning, from an individual perspective, acknowledges the cognitive processes involved in developing knowledge. Hean *et al.* (2009) state that cognitive constructivism relates to the processes experienced by learners; therefore, individual levels of learning in the conceptual framework capture the cognitive knowledge that learners construct for themselves.

My conceptual framework considers cognitive learning processes; for example, experiential learning and reflection, and captures the intricacies of being human with respect to concepts of the self and how behaviour is manifested. The individual learner is acknowledged at the centre of learning in social contexts, and Marsick and Watkins (2018) emphasise that taking into consideration environmental barriers in the social context, learning itself focuses upon individual agency, and how the individual learner personally gains new knowledge and skills at work.

3.3.2 Team Level Learning

When staff form teams, IPL culture is viewed in the conceptual framework from the standpoint of rituals or critical care practices, and collaboration. Professional roles, in terms of professional identity and boundaries, influence interprofessional interactions and learning opportunities between staff. Constructionist theories, and socio-cultural aspects of the research are reflected in the formation of COPs.

Learning at the team level indicates mutual construction of knowledge that can lead to collaborative interprofessional team action (Marsick & Watkins, 2001). Clark (2006) claims social exchanges between team members lead to learning that is greater than the sum of individual's knowledge; it is constructed through interactions and social

processes leading to learning and deeper understanding. Team level learning adopts the belief that groups share knowledge amongst individual team members (Munro & Savel, 2014), representing the social interactions which influence IPL culture within critical care teams. Teams are viewed as subcultures within the current research, and Scott *et al.* (2003) allude to the existence of occupational subcultures within the NHS. With team learning, knowledge and skills extend beyond individually constructed processes, and are mediated by the environment (Hean *et al.*, 2009).

From a social constructionist perspective, my conceptual framework views the team through the lens of socio-cultural learning theory; for example, with COPs, LPP, and zones of proximal development. Hean *et al.* (2009) refer to the early work of Vygotsky, which locates learners' development through collaboration with experienced peers in zones of proximal development. Regarding IPL, socio-cultural approaches extend levels of learning that occur uniprofessionally at individual levels.

3.3.3 Organisational Level Learning

Individual staff and the teams they form, are components of the wider healthcare system. Organisation in the conceptual framework considers this system in terms of artefacts (objects) and resources, leadership and hierarchies, and the learning environment where teams and individuals are situated. Xyrichis (2018) likens the healthcare delivery system to an ecology, where professions exist as distinct groups, based upon unique expertise and with exclusive authority over areas of profession-specific activity. This views the healthcare team as a changeable system, with integrated components inside a wider organisation. Regarding IPL, Soubhi *et al.* (2009) perceive interprofessional communities as living structures, that form systems

that are complex and adaptive, with interdependent components. Greenfield *et al.* (2010) claim inadequate attention has been given to the impact of organisational context and culture relating to IPL, advocating further understanding of professionals' engagement in IPL and practice.

Learning at the organisation level is defined by Marsick and Watkins (2001) as knowledge embedded in products and services, in systems, procedures and policies. The conceptual framework considers organisation level learning from the standpoint of organisational and systems theories, such as organisational learning and activity theory, which is underrepresented in interprofessional literature (Suter *et al.*, 2012).

The conceptual framework presents a structure, based upon current literature, which situates the phenomena of IPL within relevant conceptualisations and theories. The framework informs the research design with respect to developing appropriate methods for data collection, influencing the nature of observations and field note contents, producing a detailed authentic account of IPL in adult critical care practice. Thematic analysis of the ethnographic data identified relationships between these levels of learning, and theoretical perspectives on the findings are presented in 9.3.1 *Conceptual Framework and Theoretical Perspectives*, which may be transferable to other environments.

3.4 Methodology

To understand the IPL culture experienced by adult critical care staff, the research design adopted a qualitative methodology, naturalistic and iterative in approach (Hammersley & Atkinson, 1997). Focused ethnography is a suitable qualitative methodology to address the research aims and question.

3.4.1 Methodology Selection

Time was taken to establish which methodology ‘best fit’ the research question and aims. Ellis (2009) refers to this as ‘the uncertainty principle’, emphasising all research starts from a point of uncertainty, prompting appropriate research questions. The research method, and associated concepts, must fit the research problem (Silverman, 2010). Maintaining fidelity of the phenomena under study is more important than applying a set of methodological principles based upon philosophical arguments (Hammersley & Atkinson, 2007). Therefore, the starting point of the research design focused on clearly articulating the research aims and finding the methodological and philosophical means of addressing them.

To study social learning interactions between critical care staff in their natural environment, qualitative approaches embrace the principles of naturalism, and the IPL phenomena could be studied in its ‘natural state’ (Hammersley & Atkinson, 2007). Pollard (2008) supports this approach, claiming that individuals’ perceptions of phenomena such as collaborative learning cannot be captured with quantitative methods. Ethnography enabled observation of the IPL culture directly in adult critical care clinical practice, therefore was selected for this research.

3.4.2 Ethnography

There has been a recent push for healthcare ethnography (Paradis *et al.*, 2013); however, ethnography in adult critical care remains limited. The method of partial participant observation (discussed in section 4.3.1 *Partial Participant Observation*) was congruent with ethnography, and naturalism promotes ethnography as a principal approach in social research, with the primary goal to describe culture (Hammersley &

Atkinson, 2007). Reeves *et al.* (2008) describe ethnography as a useful methodology to generate rich detailed accounts of the relationships between interprofessional health staff.

Ethnography is defined as written accounts that richly describe a social phenomenon, using ‘thick description’ of the people being studied, their actions and reactions, and the places they occupy (Reeves *et al.*, 2013b). Ethnography originates from social anthropology, initially used to study unfamiliar social groups, and has evolved over time to understand modern society (Allen, 2004). Although significantly developed since its original inception, ethnography has core principles. For example, Reeves *et al.* (2008) purport the main aim of ethnography to create rich detailed accounts, incorporating peoples’ views and actions, giving holistic insight into the environment they inhabit, by undertaking detailed observations and conducting interviews. Through data collection, ethnographers develop nuanced insight into the social relationships and technical activities of the phenomena of interest in the research (Leslie *et al.*, 2014). Laugharne (1995) cite naturalism, holism, and culture as key facets of ethnography and Barton (2008) elaborates these features respectively as observation within natural settings, the acceptance of the complexity in social organisations, and understanding group identity and regulation.

The complex ethnographic account in this thesis is constructed from the comprehensive reflexive analysis of the data collected. Ethnographic analysis provided insight into the relationships between the nuances observed across the research sites, identifying relationships in the data, and ethnographic analysis is acknowledged as complex and time-consuming due to the volume and richness of

fieldwork data collected (Fetterman, 2010). The critical contribution of analysis to the rich descriptive ethnographic account is discussed in section 4.4 *Data Analysis*.

3.4.3 Studying Culture

Spradley (1980) explains that ethnography describes culture and, in ethnographic research undertaken by Liamputtong (2009), the critical care unit is viewed as a cultural group. Culture is a widely used term that is equally widely interpreted by those who use it, and it can be confused with the term ‘climate’. Culture points towards a powerful but invisible concept concealed beneath the surface of a groups behaviour (Schein, 2010); whereas climate refers to the attributes of an organisation or unit, rather than individuals’ perspectives (Schneider *et al.*, 2013). Culture is difficult to articulate, measure and evaluate. Ellis (2009) argues culture is invisible and intangible, and requires construction through ethnographic writing to capture patterns of human activity and the way groups of people live, to explicate the symbolic structures that give these activities meaning. Van Maanen (2011) concurs, claiming culture can only become visible through its representation by others. Culture is representative of the way people behave and interact within specific groups and can be simplistically understood as the way that ‘things are done’ in a place (Drennan, 1992, p. 9).

Since culture is an abstraction, complex anthropological models should be used to make culture observable and to shape and develop cultural thinking and understanding (Schein, 2010). In healthcare, Hunter *et al.* (2008) assert that ethnographic research, focusing on clinician interactions within the workplace, closely examines the way learning happens from a social and interactive context, considering its content, any transfer of knowledge and elements of good practice. These constituents become

visible through contexts of social and informal learning, and clinical and medical situations. This supports Schein's belief, and his definition is used to explore interprofessional culture in this thesis. Schein (2010, p. 18) defines the culture as:

“A pattern of shared basic assumptions learned by a group as it solved its problems of external adaptation and internal integration, which has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems.”

Schein (2010) acknowledges that culture in groups can fragment and form subcultures; for example, in healthcare organisations between different professional groups. Scott *et al.* (2003) claim that healthcare comprises subcultures, and variance in organisational culture are attributed to differences in specialised training, daily working practices and staff interactions. Each healthcare profession has a different culture, constructed by their values, beliefs, attitudes, customs and behaviours as a professional group (Hall, 2005). The robustness of each occupational culture can mean minimal cross-subcultural learning occurs within the NHS (Scott *et al.*, 2003). The research conducted in this thesis studied three different locations, an accepted facet of focused ethnography (Happ *et al.*, 2007), therefore the research design acknowledges the differences between organisational cultures and subcultures that form within them.

Adopting ethnographic approaches to researching familiar cultures may help the researcher to avoid making assumptions about their own cultural group and prevents everyday activities and working being taken for granted (Holloway & Todres, 2010). The insider perspective of a culture is sought by adopting an emic perspective, whereby ethnographers attempt to gain an insider's view of cultures under investigation (Savage, 2000) and focused ethnography requires an authentic knowledge of the field of study (Knoblauch, 2005). As a researcher with inside

knowledge of the field, it is recommended to view the familiar as ‘strange’ and this concept, referred to by Dixon-Woods (2003), describes the process of making the ‘ordinary’ into the ‘extraordinary’. Grounding observations with participants comments during the fieldwork helped to view the situation more impartially and Charmaz (2014) refers to the effort required to dispel the monotony of familiar observations to gain analytical insight. Ethnographic data analysis is discussed in the next chapter (section 4.4 *Data Analysis*).

3.4.4 Focused Ethnography

Stewart (1998) considers five characteristics of ethnographic study: participant observation, holism, context sensitivity, socio-cultural description, and theoretical connections. He claims that whilst ethnography has core characteristics, ‘specialised’ forms of ethnography may have additional criteria. Table 3.2 is not exhaustive, but it outlines the emerging number of methodological approaches within ethnography.

Table 3.2 Types of ethnography

Participatory	Feminist	Narrative	Visual
Institutional	Descriptive	Performance	Digital
Ergonomic	Commercial	Hypermedia	Global
Focused	Performance	Constitutive	Virtual
Ethnomethodology	Structural	Multi-modal	Online
Interpretative	Organisational	Autoethnography	Critical
Mobile	Multi-sited	Team	Native
Adaptive	Realist	Reflexive	Scientific

Ethnography is an umbrella term used to encapsulate different approaches. Focused ethnography was chosen following a process of elimination; this approach aligned best with the research aims. Cruz and Higginbottom (2013) explain that focused ethnography applies ethnography to distinct issues or experiences that are shared (such as IPL), that happen in the cultures or sub-cultures of specific environments (such as adult critical care), as opposed to large communities in their entirety. Focused ethnography can reduce the length of fieldwork by using established research questions (Savage, 2000) and with a strong focus on exploring IPL culture in adult critical care, the distinctive and well-defined aim of this research concentrated the data collection during fieldwork.

Using focused ethnography, and adopting a social constructionist paradigm, enabled exploration of the distinct issue of IPL within the specific culture of critical care; it focused on individuals activities and shared features in the subgroup and enabled study of the situated experiences of critical care staff (Hales *et al.*, 2018). Focused ethnographies, studying smaller settings or groups, often occur in a single social situation (Holloway & Todres, 2010). However, Happ *et al.*'s (2007) study demonstrates it is possible to study more than one critical care unit on a 'small-scale'. The term micro-ethnography is also used to describe focused ethnography (Spradley, 1980), and this term is often used interchangeably with focused ethnography within literature (Cruz & Higginbottom, 2013; Ellis, 2009).

3.4.5 Trustworthiness

Trustworthiness of qualitative research is composed of four criteria: credibility, transferability, dependability and confirmability (Bryman, 2012). Guba and Lincoln

(1994) disregarded the quantitative terms of reliability and validity, which impose the world view of an absolute truth, in favour of the possibility of multiple views of reality. This philosophical perspective is aligned to the stance adopted in this research, and the quantitative terminology is avoided in favour of interpretive constructionist language.

Data triangulation is one method adopted to ensure that findings reflect the reality of the phenomena being studied. Olding *et al.* (2016) advocate ethnography as a means of triangulating data, by highlighting the social, cultural, and professional processes in subjects relating to interprofessional practice in critical care, ensuring trustworthiness and featuring nuances in the research. Examples of ethnographic data triangulation to promote trustworthiness through credibility include observations, interviews, researcher reflections and analytic memos (Conte *et al.*, 2015). Data triangulation promotes credibility by collecting data across different times, different spaces and with different people (Korstjens & Moser, 2018). These were all implemented in this research to improve the credibility of the study.

In this current study, researcher ‘bias’ could be introduced by my professional experience and background knowledge of critical care practice. Actively involving research participants in checking and confirming interpreted data can reduce researcher bias (Birt *et al.*, 2016). However, member checking of observations, to clarify the credibility of researcher interpretations (Bryman, 2012), was not possible due to the large numbers of staff observed during critical care shifts. Birt *et al.* (2016) concur that member checking can be confounded with epistemological, ethical, and methodological challenges. However, given that feeding back findings to participants strengthens data because researchers and participants view data differently (Korstjens

& Moser, 2018), opportunities were taken regularly in the research to ask participants questions to facilitate my interpretation of the data collected. Interviews within ethnographic studies are noted to provide additional insight to the participants' perspectives and can shape the focus of further observations, ensuring the research process remains iterative and theoretically focused (Brewer, 2000). In this ethnography, to enhance trustworthiness of observations, interviews were used to further explore observed experiences promoting credibility in this research through participants confirmation of data interpretation (Bryman, 2012).

Research credibility is enhanced with prolonged engagement and persistent observation (Korstjens & Moser, 2018). Prolonged engagement in the field of study generates trust with participants, enabling familiarisation with the context and the richness of data (Guba & Lincoln, 1994). The focused ethnography approach collected data over a 12-month period, enabling prolonged engagement within the field and insight to the relevant issues regarding IPL culture. Persistent observation was facilitated by my role as the sole researcher. Conte *et al.* (2015) additionally note that one person collecting data ensures consistency in the research, thereby promoting dependability. Dependability and confirmability, integral aspects of trustworthiness, require a clear 'audit trail' detailing the steps taken throughout the research process (Korstjens & Moser, 2018). The research steps are described throughout the thesis within the appendix with the inclusion of explanatory material.

The goal of ethnographic research is not to generalise findings (Savage, 2000). With focused ethnographies specifically, generalisation of the results to other settings is unfeasible; however, there remains the potential for transferability of ideas (Happ *et*

al., 2007). Data needs to provide thick description about behaviour, experiences and context so that others can give meaning to the findings, promoting transferability (Korstjens & Moser, 2018). O'Reilly (2005) suggests rich ethnographic findings may have inferences for other groups and what has been learnt can be transferred. Consequently, the trustworthiness of focused ethnographic fieldwork is supported by the focus on a specific aspect of a culture, generating rich data.

Transferability of findings supports the primary purpose of this doctoral research, to make a contribution to knowledge in a specialist area of practice. Park (2007) advocates the primary emphasis of the doctorate to develop disciplinary knowledge, with preference to applied research and knowledge transfer. Reeves *et al.* (2011) assert that the interprofessional research community will yield greater transferability of research findings with studies occurring across multiple sites and different institutions. This research provides a broader context across three research sites, potentially increasing the transferability of findings: promoting knowledge advancement of the day-to-day practices and IPL culture of adult critical care.

Paradis *et al.* (2013) created a 10-point scale to appraise the quality of ethnographic research, constructed from guidance from other research publications. These criteria have been incorporated into this thesis, as demonstrated within table 3.3, to further assure the quality of the ethnographic research undertaken.

Table 3.3 Quality criteria for ethnographic research

Paradis <i>et al.</i> (2013) criteria to evaluate the quality of ethnographic research:	How quality criteria is situated within this focused ethnography:
The author(s) acknowledge the biases that may have impacted their data collection and interpretation.	1.2 <i>Professional Background</i> 3.2.1 <i>Ontology and Epistemology</i> 3.4.5 <i>Trustworthiness</i> 4.2.5 <i>Accessing the Field</i> 4.4.10 <i>Reflexivity</i> 4.5.3 <i>Professional Role Conflict</i> 5.2 <i>Presentation of Findings</i> 9.8 <i>Strengths and Limitations</i> 10.1 <i>Researcher Reflections</i>
<ul style="list-style-type: none"> • Recognition of potential professional experience and background influences. • Reflexivity was adopted to acknowledge researcher values and assumptions. • Theoretical, epistemological, and philosophical assumptions articulated. • Congruence between ontology, epistemology, and methodology. • Unfamiliar research sites were chosen to reduce subjectivity. • A range of professions and research sites sampled to give insight to IPL culture. • Partial participant observation enhanced interpretation through participant discussion during fieldwork. • Prolonged fieldwork explored the participant's authentic practice. • The researcher role was explored with reflexivity and with ethnographic writing. • Reflexive comments were analysed. • Participants terminology was used in coding to present their perspectives. • Inclusion of data extracts represent the social realities of participants. • Monthly supervision meetings discussed findings. • Intervals between data collection explored researcher interpretations with data driven iterative analysis, influenced by participant perspectives. • 10% of transcripts were reviewed by supervisors. • Researcher reflections consider the influence of the researcher and potential bias. • Strengths and limitations of the study were reviewed. 	
A rationale for the sampling method is given.	1.2 <i>Professional Background</i> 4.2 <i>Sampling (full section)</i> 9.8 <i>Strengths and Limitations</i>
<ul style="list-style-type: none"> • Context to critical care is given describing the participant professionals present. • A critical care definition showed the boundaries of the research sites. • Multiple sites were used to give insight into culture across critical care units. • Purposive sampling occurred with pre-determined research sites, with staff member selection for interviews linked to their presence and time spent together in the units, their experience and ability to voluntarily engage in discussion. • Opportunistic sampling was used for observations on set days and times. • The combination of professions is unique. • Inclusion and exclusion criteria are provided. • Strengths and limitations have been considered. 	

Table 3.3 continued

Details are given about data collection.	4.2.5 <i>Accessing the Field</i> 4.2.6 <i>Leaving the Field</i> 4.3 <i>Data Collection (full section)</i> 5.1 <i>Research Site Profiles (full section)</i> Appendix 8 Appendix 9
<ul style="list-style-type: none"> Information is provided about accessing and leaving the field, including ethics. Documents used in the data collection are identified, described, and examples shown e.g., observation template in appendix 8. Details are provided about partial participant observation, the observation schedule used in each site, semi-structured interviews, the interview topic guide used, consent forms, advertising the research, participant letters and information sheets, and the use of conceptual maps to collect and organise data. Research site profiles give details about the information obtained from initial environmental visits and about the critical care environment from data collection. 	
The authors sought to maximise the range of perspectives obtained.	4.2.2 <i>Multiple Research Sites</i> 4.2.4 <i>The Sampling Strategy: Interviews</i> 4.3 <i>Data Collection</i>
<ul style="list-style-type: none"> Three research sites were selected to maximise perspectives in different types of NHS hospitals, in different NHS Trusts, at different times in the week. All healthcare staff were observed during observations and four prominent staff groups were interviewed to gain insight into IPL culture in critical care. 	
The authors used member check to validate their understanding with the populations observed.	3.4.5 <i>Trustworthiness</i> 9.8 <i>Strengths and Limitations</i>
<ul style="list-style-type: none"> Member check was challenging in critical care with large fluctuating staff numbers. However, prolonged fieldwork and iterative analysis with partial participant observation enabled researcher interpretation to be checked with participants during interviews and observations. 	
Data were analysed iteratively.	3.2.1 <i>Ontology and Epistemology</i> 3.4 <i>Methodology</i> 3.4.5 <i>Trustworthiness</i> 4.2.4 <i>The Sampling Strategy: Interviews</i> 4.3 <i>Data Collection (full section)</i> 4.4 <i>Data Analysis (full section)</i> 9.8 <i>Strengths and Limitations</i> Appendix 10
<ul style="list-style-type: none"> Iterative analysis is discussed from a methodological perspective. 2-3 weeks intervals between observations enabled transcription and analysis. An observation schedule was used in all sites. Interviews conducted at the midpoint of data collection periods were iteratively informed by observations (see figure 4.1 Data collection sequence timeline). Literature and theory informed analysis; conceptual maps related literature and theory to findings. Iterative data analysis in thematic analysis is discussed. An exemplar of iterative analysis is in appendix 10.8. 	

Table 3.3 continued

The authors use theory to either orient their inquiry or discuss their results.	3.2.1 <i>Ontology and Epistemology</i> 3.2.2 <i>Social Constructionism</i> 3.3 <i>Conceptual Framework (full section)</i> Chapter 9: <i>Discussion</i> Appendix 11
<ul style="list-style-type: none"> • The philosophical position of the research study is situated using theory. • The focus of the research resides at the intersection of several areas of literature. • A conceptual framework is developed based upon theory and literature. • Findings are mapped against literature and theory in the discussion chapter. 	
Data were triangulated to increase validity.	3.4.5 <i>Trustworthiness</i> 9.8 <i>Strengths and Limitations</i> Appendix 10.1, 10.2, 10.6, 10.8
<ul style="list-style-type: none"> • Data was triangulated with semi-structured interviews, field notes and sketches, reflexive memos and researcher reflections, conceptual maps, analytic memos. 	
Exceptions to the main story are acknowledged.	7.5.4 <i>The Work Family</i> 8.4.1 <i>Being Motivated</i>
<ul style="list-style-type: none"> • Cultural patterns across all sites are presented, but exceptions are acknowledged. • Exceptions to the ‘main story’ include: <ul style="list-style-type: none"> ○ One consultant who did not perceive critical care colleagues as a ‘work family’. ○ HCAs experiencing frustration with misalignment between high levels of motivation to learn and professional restrictions to their skill development. 	
Results are discussed in dialogue with previously published literature	Chapter 9: <i>Discussion</i>
<ul style="list-style-type: none"> • Study findings are presented in relation to literature from the following positions: <ul style="list-style-type: none"> ○ Acknowledging the unique contribution to knowledge ○ Extending understanding of current literature and theory. 	

3.5 *Summary*

In conclusion, this methodology chapter gives insight to the research design central to the thesis. Social constructionism is presented as the philosophical lens of enquiry framing the focused ethnography, and a conceptual framework has been developed to underpin the research. Consideration is given to the quality and trustworthiness of focused ethnographies, and the challenge to retain ethnographic principles whilst ensuring credibility of the research process and transferability of findings. The next chapter explores sampling, research methods used to collect data, ethical considerations and the approach taken to analyse data.

CHAPTER 4: RESEARCH METHODS

4.1 Introduction

This chapter discusses sampling strategies and data collection using partial participant observation and one-to-one semi-structured interviews. Discussion progresses to consider data analysis using thematic analysis (TA) and reflexivity; the chapter concludes with ethical considerations of the study.

4.2 Sampling

Sampling was site-specific and was shaped by defining the population of interest, adopting different sampling strategies for observation and interviews, and recruitment was achieved through considerate access to the field of study.

4.2.1 Defining the Population of Interest

An adult critical care definition was developed to ensure clarity in the recruitment and observation of participants with regard to geographical boundaries, contrasting the idealism that critical care is delivered ‘without walls’ (DH, 2000b). In this research adult critical care is defined as:

*The complex and acute care provided to adults, with single or multiple organ failure, who are cared for **within** the critical care unit and there should be the prospect of recovery or improvement in the patients’ condition at the time of their admission.*

4.2.2 *Multiple Research Sites*

Three critical care units, from different Northern England NHS Hospital Trusts, were selected based upon their size, structure, and population catchment area. Ethnographies, particularly focused ethnographies (Happ *et al.*, 2007), often use multiple research sites by design (Endacott, 1999; Hardey *et al.*, 2000; Reeves *et al.*, 2015). Observing multiple research sites embraces the diverse organisational culture within different clinical environments, whilst seeking rich ethnographic description. The purposive selection of three adult critical care units arose from lengthy supervisory discussions, particularly with the third PhD (Doctor of Philosophy) supervisor, whose professional remit was to direct the Operational Delivery Network for critical care units in North England. The decision was additionally guided by IPL literature in critical care to fulfil the methodological aims of ethnography and multisite research was considered the best approach to increase transferability of findings to the local population of interest, which were anticipated to be critical care staff and educators. Chapter five *Preface to the Findings* provides further detail about the research environments.

My decision to observe more than one adult critical care environment, across different NHS hospital Trusts, was multifaceted and based upon the following:

- to account for potential varying organisational learning cultures,
- to offer variation in the data and broaden the scope of understanding the IPL culture in adult critical care,
- to improve the richness, breadth, and depth of data by observing multiple sites,
- to improve transferability and usability of findings by consumers of the research.

The challenge with multiple research sites was to preserve the authenticity of the focused ethnographic approach. To adopt a pre-determined focused approach (Cruz & Higginbottom, 2013), exploring IPL culture, it was imperative that geographical research sites were not merely compared to each other, which occurs when using multi-sited ethnographic methodologies (O'Reilly, 2009). Environmental boundaries for the fieldwork warranted differentiation. Without this, the research risked becoming 'mobile', by actively following critical care staff around the hospital and community as they cared for patients, rather than staying in one geographical location (O'Reilly, 2009). Hence, the greatest challenge in undertaking a focused ethnography in multiple sites was to retain the uniqueness and distinctiveness of the focused ethnography, whilst considering the practicalities of dedicating appropriate time in each site to ensure rich data and to minimise impact of the researchers' presence in the field (O'Reilly, 2009). Researcher presence is discussed in 4.4.10 *Reflexivity*.

4.2.3 The Sampling Strategy: Observations

The three research sites were predetermined, making the overall sample purposive (Holloway & Todres, 2010) and, during observations, participants were sampled on an opportunistic basis, involving whoever was on shift at that time. Reeves *et al.* (2013b) explain that during ethnography, participants are sampled in either an opportunistic or purposeful way, to observe the activities and interactions that occur in the field of study. Sample size could not be predicted in advance of fieldwork, due to the unpredictable nature of critical care and alternating ratios of staff working within this clinical environment (Paradis *et al.*, 2014b; Philpin, 2006; Reeves *et al.*, 2015). To raise awareness of the research activity, posters were displayed (appendix 5), and frequent introductions and verbal consent for observation were sought whenever possible. Access to the field and sampling emphasised that participants could leave the

study at any time, by contacting me, key clinical staff, or the supervision team. Inclusion and exclusion criteria for observation sampling is indicated in table 4.1, and further details regarding consent and opt in and out processes are in section 4.5.4 *Consent for Ethnography*.

Table 4.1 Inclusion and exclusion criteria for observation sampling

<i>Inclusion criteria:</i>	All healthcare staff and health professional students in the critical care unit.
<i>Exclusion criteria:</i>	Patients, visitors.

4.2.4 The Sampling Strategy: Interviews

It was methodologically challenging to specify the number of participants required for iterative interviewing. Ethnographic literature indicates interviewing between 14–45 participants, with greater numbers of people observed and fewer interviewed (Cruz & Higginbottom, 2013). This research aimed to interview one to three staff, from each selected staff group (nurse, doctor, physiotherapist, and HCA), per research site.

Nurses, doctors, physiotherapists, and HCAs were selected for interviews, representing the most prominent occupational groups in critical care, and this gave the greatest potential for rich insight to critical care IPL culture. The combination of professions in this study is not currently researched and introduces another element of originality to the thesis. Further exploration of interactions and learning between different staff groups is needed to understand learning in critical care (Hunter *et al.*, 2008; Manias & Street, 2000a, 2000b, 2001a, 2001b; Wagter *et al.*, 2012).

Staff gender was documented within participant records, but other demographics, such as race or age were not. Whilst Paradis *et al.* (2013) articulate a need to recognise participant demographics within ethnography, focused ethnography does not contrast factors in the way critical or comparative ethnographies would, therefore gender was only included discursively within findings discussion, and not in data interpretation.

At the end of the 12-month data collection period, between 12 and 36 critical care staff interviews were planned to inform observations. As a guide, the duration of interviews was predicted between 45-60 minutes, taking place in a confidential area within the hospital grounds. Interviews were audio recorded using a digital voice recorder, then uploaded for secure electronic storage prior to transcription.

Numerous approaches were utilised to recruit critical care staff for interviews, including poster advertisement (appendix 5), inviting staff with information cards (appendix 6) and emails were voluntarily sent by gatekeepers raising awareness of my presence, inviting staff to participate in the research. Participants expressed interest through gatekeepers or directly to me. Ultimately, staff were purposively sampled for interviews, based upon their healthcare role experience and perceived ability to voluntarily engage in a dialogue about IPL (Price, 2013).

Inclusion and exclusion criteria for sample selection for interviews are in table 4.2.

Table 4.2 Inclusion and exclusion criteria for interview sampling

<i>Inclusion criteria:</i>	Nurses, doctors, physiotherapists, HCAs in critical care.
<i>Exclusion criteria:</i>	Patients, visitors, students, non-healthcare staff or others affiliated with critical care but working outside the unit (e.g., Outreach, Acute Response Teams, or bank healthcare staff).

4.2.5 Accessing the Field

O'Reilly (2009) suggests the first step to field access should be taken cautiously. Accessing the field of study is an acknowledged challenge of ethnography (Fetterman, 2010; Hammersley & Atkinson, 2007; O'Reilly, 2009). Reeves *et al.* (2013b) emphasise that ethnographers need to gain credibility with gatekeepers to enter the field of study. In critical care, the gatekeepers who facilitated my entry into the units were research sisters, ward managers, physiotherapist leaders and consultants. Prior to contacting gatekeepers, ethical approval had been granted from the University, NHS HRA (National Health Service Health Research Authority) approval was issued, and research capacity was approved from each hospital research department.

Gaining access to critical care units in three different NHS Trusts was complex and lengthy. It involved meeting many people and completing many forms. Each research site had access to a file containing details of the research study and this stayed on the unit during each four-month research period. Observation schedules were negotiated, shared, and added to unit diaries. Access was renegotiated continuously during the research. Hammersley and Atkinson (2007) stress that access to research areas is not a 'one off event'. Reeves *et al.* (2008) agree it can be difficult to secure repeated access, due to long periods of time ethnographers spend conducting research.

Gaining access to the field required heightened perceptual awareness and effective interpersonal skills, to respectfully navigate the often-chaotic world of critical care when perceived as an outsider. The research was purposively designed to balance insider and outsider perspectives, principally in view of ethnographic criticisms where the researcher can become too close to the field of study to view it impartially (Allen, 2004), a situation often referred to as ‘going native’ (Pugh *et al.*, 2000). Although, the adult critical care environment reflects my area of professional expertise, I was not affiliated with any of the research sites. Researching these three sites was deliberate, to minimise assumptions and to promote the trustworthiness of the ethnographic data presented. Familiarity within the critical care units was expected to grow as the fieldwork progressed and was anticipated to indicate my successful integration into each research site. Van Maanen (2011, p. 9) asserts that ethnographic fieldwork usually starts without much of an introduction, as strangers’ step into a “culturally alien community”; initially strange environments and unfamiliar people become increasingly familiar to the researcher. This did happen throughout the research, however, my role was frequently negotiated as I moved among strangers in the units and my status fluctuated, as participants could view me as a suspicious observer or a professional visitor (discussed further in 10.1 *Researcher Reflections*).

4.2.6 Leaving the Field

Leaving the field of study is a neglected area in ethnographic literature; it is of methodological significance and it must be conducted with care and diligence (Gobo, 2008). Participants can be surprised if researchers announce their imminent departure as they disengage from the field (Bryman, 2012), therefore researchers need to be sensitive to the cultural group they have become part of during their study, and their exit needs to be respectful, articulated and well planned (Brewer, 2000). In this

research, to orchestrate the exit, the scheduled field visits were widely disseminated with participants to clearly demarcate the completion date of the data collection. Each research site had four months allocated for data collection, and this made the exit points clear for participants. The removal of the research information file and posters also visually marked completion of the research, and verbal farewells and expressions of gratitude reinforced the withdrawal process.

4.3 Data Collection

Due to the complex nature of adult critical care (Rothschild *et al.*, 2005), time was taken to ensure that the research methods planned were sensitive and contextually appropriate. Fetterman (2010) supports this considerate approach, strongly emphasising the importance of thorough planning and demonstrating foresight in ethnographic research. Ethnographic studies typically adopt the principles of methodological pluralism (Allen, 2004), to ensure numerous voices are accessed in the culture under investigation (Goodley, 2000). Therefore, two data collection methods were employed: observation field notes to capture partial participant observation and researcher interpreted culture, and semi-structured interviews to elicit hidden meaning and perceptions through participant discussion. Adopting methodological pluralism encourages integration of the researcher perspective in conjunction with the participants (discussed in 4.4.10 *Reflexivity*). Table 4.3 outlines the data collection process.

Table 4.3 Data collection process

DATA COLLECTION PROCESS	
DATE	ACTIVITY
Dec 2012	Project Approval
MATERNITY LEAVE	
Nov 2014	Northumbria University Ethics Approval
June 2015	GCP Training (National Institute of Health Research (NIHR))
July 2015	Disclosure and Barring Service (DBS) Clearance
Oct 2015	HRA Approval (NHS Permission using the Integrated Research Application System (IRAS))
Nov 2015	Research Passport
Nov 2015	Letter of Access: RS1 (Research Site 1)
Dec 2015	Letter of Access: RS2 (Research Site 2)
Jan 2016	Ethnography Training
Jan 2016	RS1 data collection: 6 observations = 30 hours 9 interviews: Nurse: 3, Doctor: 2, HCA: 2, Physiotherapist: 2
April 2016	Letter of Access: RS3 (Research Site 3)
May 2016	RS2 data collection: 6 observations = 30 hours 8 interviews: Nurse: 2, Doctor: 2, HCA: 1, Physiotherapist: 3
Sept 2016	RS3 data collection: 6 observations = 30 hours 5 interviews: Nurse: 1, Doctor: 2, HCA: 1, Physiotherapist: 1
Dec 2016	All data collected: 18 field notes and 22 interviews ➤ 250, 000 words of transcribed data

During the data collection period in each site, research began with practice observation and participants were recruited to semi-structured interviews as data collection

progressed. Figure 4.1 visually indicates the sequence of interviews with respect to observations during the timeline of data collection.

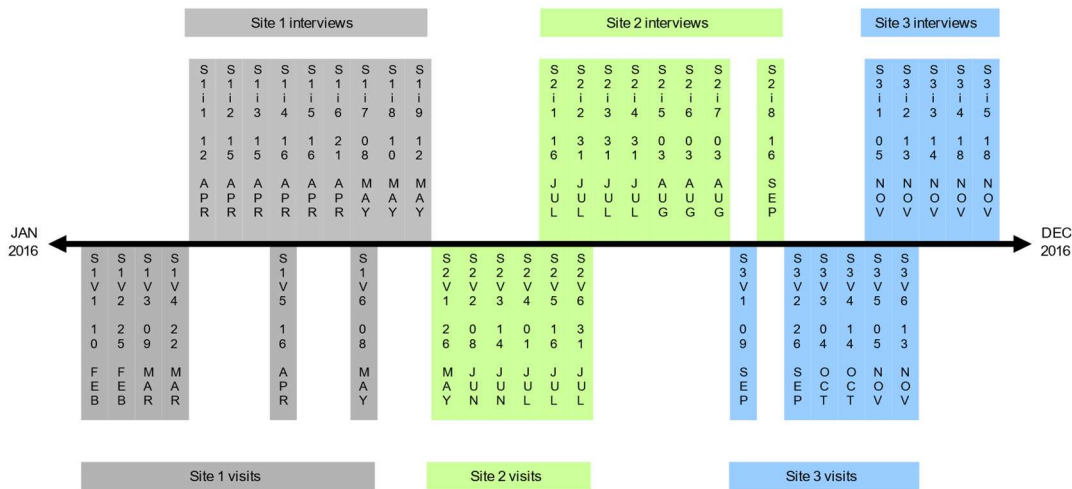


Figure 4.1 Data collection sequence timeline

4.3.1 Partial Participant Observation

Participant observation is the main method of data collection in ethnography (Allen, 2004; Brewer, 2000; Fetterman, 2010; Gobo, 2008; Hammersley & Atkinson, 2007; O'Reilly, 2009; Reeves *et al.*, 2008; Savage, 2000). The aim of observation was to seek an understanding of the context of IPL culture within adult critical care. There are varying levels of researcher involvement with ethnographic observation, ranging from participant to non-participant (Spradley, 1980). A 'partial' approach to observation offered flexibility to provide iterative rich data from researcher observations and from participants explanations and perspectives (Spradley, 1980).

Spradley (1980) considers non-participant observation as passive, preventing the researcher to ask questions or clarify observations, whereas participant observation involves full immersion within the culture under study. This 'pure' ethnographic

approach in the complex environment of critical care would present potential difficulties (Endacott, 1999). Applied to my research, this approach would involve potential risk to staff and patients. To be a participant observer in the complex environment of critical care would constrain observation or potentially distract the researcher from caring for the critically ill patient, who would always be the priority according to professional regulatory bodies such as the General Medical Council (GMC, 2019), Health and Care Professions Council (HCPC, 2016), Nursing and Midwifery Council (NMC, 2018) and Skills for Care and Skills for Health (SfC/SfH, 2013). Full immersion and participation within critical care was not appropriate in my study due to pragmatic, ethical, legal, and professional issues. Partial participant observation promoted patient safety, because involvement in patients' direct care could be avoided, in favour of focusing on the research.

Pretzlik (1994) describes the 'partially-involved observer', claiming benefits from selective involvement, allowing opportunity to clarify understanding of situations, giving freedom to ask questions, and thus giving meaning to observations, whilst providing the option to avoid interaction with participants if needed. Avoiding interaction with participants was advantageous when additional people were present during observations. In this research, the critically ill patient and their family were often present during observation periods but were not the focus of the ethnography. Partial participant observation minimised direct researcher involvement during fieldwork, which could have otherwise detrimentally affected the patient care experience in terms of their safety, privacy, and dignity. Furthermore, the partial approach offered the flexibility needed to provide rich data, while retaining

impartiality and promoting patient safety in an environment where staff need to concentrate to competently deliver high quality care to complex patients and families.

Systematically collected observations of the social interactions and behaviour of adult critical care staff in relation to IPL in each research site generated field notes, that when analysed, iteratively informed interviews at the second stage of data collection and shaped informal discussions during subsequent periods of observation (Reeves *et al.*, 2008). Interviewing enabled further exploration of the observed culture of IPL, and is particularly appropriate because IPL is a notably complex phenomenon to observe in clinical practice (Wagter *et al.*, 2012). Interviews are discussed in section 4.3.4 *Semi-Structured Interviews*.

4.3.2 Observation Schedule

An observation schedule was followed in each unit (table 4.4) and an observation template was developed to frame observations (appendix 8). The observations in each NHS critical care unit occurred over a four-month period, totalling 12 months of data collection, synonymous with several ethnographic research studies (Philpin, 2006; Price, 2013) and advocated by Fetterman (2010).

To holistically explore the complex cultural setting (Barton, 2008), shift variations were important to observe, so that IPL exploration was thorough, considering variables of time and context (Price, 2013). To gain rich insight into critical care IPL culture, the observation schedule was planned across different days and times of the week. O'Reilly (2009) emphasises that ethnography is useful to witness complex changing

events in participants' lives, where there is time to sample across times of the day, week, month, and year, to observe and engage as culture unravels. Critical care is provided continuously, and it was envisaged this scheduled approach would optimise the potential to observe interprofessional interactions, such as during interprofessional ward rounds, handovers, staff breaks, meetings, and, if appropriate at the point of visible care delivery, as well as viewing day-to-day practices.

Six observations were conducted in each critical care unit, and were spaced to enable transcription, data analysis and analytic reflections between visits. The first was a short environmental visit to make initial introductions to staff, map the environment and study the space and objects in social settings (Spradley, 1980). Weekday visits that followed included an early shift, late shift and the overlap between day and nightshift. Shifts were also attended on a Saturday and Sunday to capture weekend activities. A seventh visit was indicated in the schedule to represent participant interviews which could not be scheduled. Table 4.4 illustrates the visiting schedule in each research site.

Table 4.4 Observation schedule example

Introductory visit	Visit 1: environment	Visit 2: morning	Visit 3: afternoon	Visit 4: evening	Visit 5: Saturday	Visit 6: Sunday	Visit 7: Interviews
1 hr	1 hr	7am-1pm	1pm-6pm	6pm-12am	7am-1pm	1pm-6pm	1 hr n=4-12

4.3.3 *Observation Template*

Le Clus (2011) emphasises that when people interact, informal learning extends individuals' body of knowledge, and this is represented through social interactions, conversations, mentoring and teamwork, which are all observable activities in critical care. Observations focused on the social interactions between critical care staff, where learning opportunities might transpire or become visibly apparent (Wagter *et al.*, 2012). To observe these interactions in this study, emphasis was given to the context of the environment, aspiring to fulfil the principles of naturalistic study to describe the culture (Hammersley & Atkinson, 2007). The observation template developed to capture field notes from observations, focused on the research aims but was flexible enough to capture reflexive comments and large volumes of data (appendix 8). To retain the context of reflexive comments they were integrated into field notes, and analytical notes tracked the interpretation of findings, enabling iterative analysis as field work progressed. This approach defined description, meaning and theoretical content, and inductively merged with field notes (Conte *et al.*, 2015).

Field note observations were recorded in an A5 notebook; with the aim of expanding and transcribing within 24 hours of each observation period (McLean *et al.*, 2016). The template promoted consistent baseline observations for every fieldwork visit; it made the research aims visible, whilst inductively and reflexively making observations during the fieldwork. Barlow (1994) refers to the importance of using an observational template to structure observations to ensure consistency, clarity of the study concepts and to explicate what is being observed, and this benefits multiple-site research.

The observation template needed to be designed so that it could capture examples of IPL. IPL is regarded as a complex phenomenon to observe in clinical practice, and has been described as invisible when it becomes integral to work (Boud & Middleton, 2003; Wagter *et al.*, 2012). Eraut (2000) described the challenge for researchers to make tacit knowledge explicit, stating that prolonged observation is needed. Images were also drawn within field notes to capture examples of IPL and to provide visual context to support researcher notes. To increase the visibility of IPL, the Skule (2004) seven stage framework of learning conditions (figure 4.2) was influential in shaping the type of details captured during observations. These criteria imply that critical care is classified as a ‘learning intensive job’; due to its complex and demanding nature, high exposure to change, demand, decision-making and extensive professional contacts (Rose, 2011). According to the framework, the presence of these factors significantly affects informal workplace learning and validates and recognises informal learning.

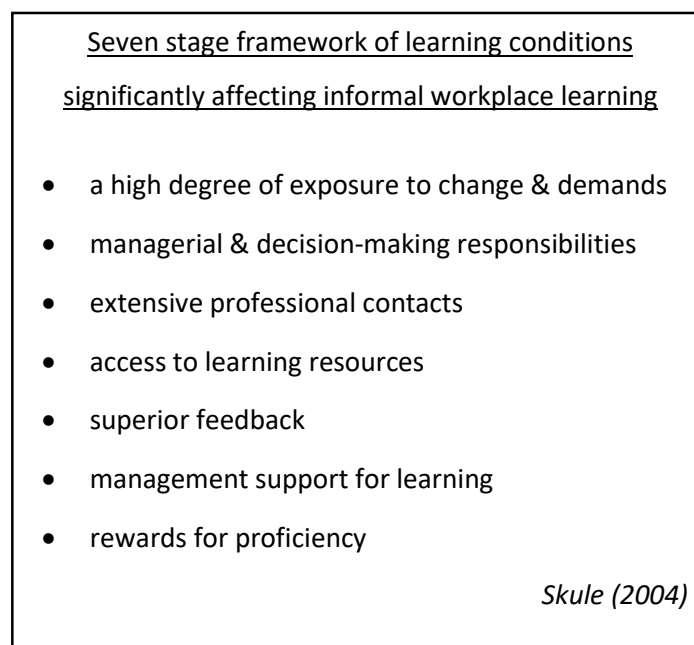


Figure 4.2 Framework of learning conditions

Reeves *et al.* (2008) claim writing ethnographic field notes is a difficult task, complicated by the need to comprehensively record the multifaceted nature of social interactions in healthcare environments, whilst considering temporal, spatial and behavioural influences. Spradley (1980) suggests ethnographers' study nine major dimensions of the social setting. To recognise IPL in the social setting of critical care, the observation template modified Spradley's dimensions. Based upon my professional experience of environmental factors in critical care, the dimension of space was expanded to explore the effects of environmental light and excessive noise. Eleven dimensions were therefore added to the observation template and Skule's framework of learning conditions influenced which social interactions were documented as indicative of IPL (figure 4.3).

<u>Nine major dimensions of the social setting</u>	<u>Extended dimensions applied</u>
<ul style="list-style-type: none"> • Space: the physical place or places • Actor: the people involved • Activity: a set of related acts people do • Object: the physical things that are present • Act: single actions that people do • Event: a set of related activities that people carry out • Time: the sequencing that takes place over time • Goal: the things people are trying to accomplish • Feeling: the emotions felt and expressed 	<ul style="list-style-type: none"> - light: artificial, natural, levels - noise: levels, type, duration <p><i>Spradley (1980) p.78</i></p>

Figure 4.3 Observation template dimensions

4.3.4 Semi-Structured Interviews

Qualitative interviews enabled further analysis of the knowledge between ‘actors’, and interview questions explored participants’ first-hand experiences of IPL in critical care (Waring *et al.*, 2014). Semi-structured interviews gave in-depth insight about the knowledge that critical care staff learn, that cannot be observed directly (Spradley, 1980). Interviews were conducted in rooms at the research sites and were digitally recorded, then later transcribed verbatim. Handwritten notes were also captured during interviews to track topics as they were discussed, and data and preliminary candidate themes from previous observations and interviews were also accessible during the interview on a sheet of paper which was used in every interview to promote iterative analysis of findings.

Interviewing can be complex and demands proficient researcher skills. During interviews, researchers need to ‘home in’ on learning experiences at work to help participants unaccustomed to talking about IPL articulate their experiences (Eraut, 2000). Eraut suggests that interviewers adopt situationally located interview styles, that are modest and reflexive, where participants are empowered to promote honesty in their responses and where researchers can use their knowledge of learning to help participants to describe and make meaning of their experiences.

4.3.5 Interview Topic Guide

Qualitative interviews can be guided by questions (Silverman, 2010). A semi-structured, guided approach to interviews offered space for divergence from set questions, and encouraged rich and rewarding conversations with participants (Wisker, 2008). The interview topic guide developed (appendix 9) provided

sufficient structure to meet the study aims and facilitated an inductive approach but, promoted spontaneous discussion central to participants' views and perceptions to explore their social world (Bryman, 2012). Flexibility in the guide facilitated the incorporation of new questions from themes that had been constructed from previously analysed data and it was used alongside the handwritten paper which captured these findings. The interview topic guide developed followed Spradley's format for interviews (Spradley, 1979). Spradley's interview format uses a 'grand tour' question, then descriptive, structural and contrast questions (Storesund & McMurray, 2009). Table 4.5 gives examples of questions used during interviews.

Table 4.5 Interview questions based upon Spradley (1979)

Question Type	Example
Grand tour <i>To establish the context of the study</i>	A great place to start would be for you to tell me about your role in critical care. What does your role entail?
Descriptive <i>To enable participants to explain and verbally illustrate IPL experiences</i>	How do you learn in critical care? Can you give me an example of a time you learned from another profession in critical care?
Structural <i>To uncover domains of IPL culture; how participants construct and use knowledge in critical care</i>	Can you describe how learning occurs during emergencies? I can give you an example. During a recent shift, a patient lost their airway on multiple occasions. Lots of different professions came to help to stabilise the patient. Where do you think the learning opportunities are in situations like this?
Contrast <i>To understand participants 'native' language and the meaning of terms, by comparing to other situations</i>	What is your understanding of the term IPL? Can you give me an example of a time you didn't learn from others, or where there was perhaps a missed opportunity for IPL in critical care?

4.3.6 Conceptual Maps

Conceptual maps were used in this research to:

- organise, compare, and make sense of data
- refine themes
- map findings to theory and literature
- refine central organising concepts

Conceptual mapping was used to organise, compare, and make sense of data; it drew together cultural observations and participant perspectives from the data collected, and helped to transition from codes to candidate themes. Conceptual mapping provided a broad overview and segmented data, to focus on details in the research dataset (Grbich, 2013). An example is provided in appendix 10.8 of a conceptual map used to consolidate findings about rationales and instructions.

Conceptual mapping was integral in refining the contents of themes, and the process was used to associate themes and their subthemes within larger overarching themes. It additionally enabled relationships between themes to be visualised. For example, holistic IPL was noted to be a relationship rather than a discrete overarching theme (appendix 10.3).

Appendix 11 illustrates how conceptual maps were used to map observation and interview findings against theory and literature to balance data interpretation, as analysis proceeded. Central organising concepts were refined with the use of conceptual mapping, as shown in appendix 10.4, and were useful to ensure the contents of themes were distinct.

4.4 Data Analysis

Analysis of ethnographic data is generally approached in inductive and thematic ways, where themes and key issues are sought and, following careful analysis, theoretical explanations are generated (Reeves *et al.*, 2008). In this thesis, data from the focused ethnography was analysed using Thematic Analysis (Braun & Clarke, 2006). This iterative process is well aligned to ethnographic research, since inductive thematic analysis is data-driven, provides rich description of the data and is not driven by theoretical interest or pre-existing coding frames (Braun & Clarke, 2006). This enabled increased focus as analysis proceeded, producing candidate themes (Braun *et al.*, 2014), and fieldwork observations provided ideas that were refined and explored within subsequent interviews (Price, 2013). This supports the methodological aim to understand others' culture and perceptions in ethnography (Reeves *et al.*, 2013b).

4.4.1 Ethnographic Data Analysis

Ethnographies typically consist of complex narratives (Tavory & Timmermans, 2009), yielding rich and extensive written accounts (Van Maanen, 2011). In this research, over 255,000 words of data were transcribed from 18 fieldwork observations and 22 interviews, including reflexive and analytical comments. A criticism of ethnography is the volumes of complex data it creates and the ethnographer needs to apply skilful analysis to bring order and structure to the vastness of textual data collected (Brewer, 2000). To securely manage and analyse large volumes of transcribed data, NVivoTM software was used to provide secure storage with password protection, and the software was used to facilitate the later stages of analysis. Fetterman (2010) claims NVivo is well-suited to ethnographic research because it can manipulate large amounts of data, including long field note entries and verbatim quotes. The software stored

images and audio files, and this enabled diagrams from ethnographic field notes and memos to be managed and analysed alongside text.

In his key text *The Ethnographic Interview*, Spradley (1979 p.93) emphasises that:

“Ethnographic analysis is the search for the parts of a culture and their relationship as conceptualised by informants”.

The universal purpose of ethnographic analysis is to explore field notes to establish cultural patterns (Spradley, 1980). However, this thesis extends beyond recognition of cultural patterns with IPL in adult critical care. It seeks to understand the intricacies and nuances of the IPL culture within the complex environment to interpret meaning and to explore theoretical relationships between the cultural patterns described in the ethnographic account. Jones and Smith (2017) explain that ethnography involves detailed analysis, and with a thoroughly documented ‘audit trail’ of analysis, and with careful documentation of emerging themes, the reliability of findings is assured (discussed further in 4.4.9 *The Detailed Audit Trail*). An example of detailed analysis in this research is provided in appendix 10.8, with extracts of NVivo analysis and with the inclusion of an exemplar using one coded observation, detailing the iterations of analysis that followed, which resulted in the construction of a key finding from the research and development of the theoretical CAUSE decision-making framework.

Iterative analysis of qualitative research in this research led to increased focus as analysis proceeded (Hardey *et al.*, 2000). The idea of funnelling and focusing ethnographic observation over time is advocated by Spradley (1980) and Hammersley and Atkinson (2007), and this process is informed by ‘intervallic’ data analysis to inform subsequent observations. Since ethnography is more of a process as opposed

to a sequence, analysis is continuous, occurring simultaneously with data collection (Brewer, 2000). This further exemplifies the need for ethnographic analysis to occur in congruence with data collection, using a systematic approach that lends itself to the principles of iterative analysis and qualitative observations.

Ethnographic literature reveals many analytical approaches can be applied, such as open coding (Williamson *et al.*, 2012), comparative analysis (Seymour, 2000), grounded theory (Costello, 2001), thematic analysis (Gabbay & le May, 2004), content analysis (Williamson *et al.*, 2012), narrative analysis and discourse analysis (Goodley, 2000). Goodley (2000) argues all approaches include the identification of themes and their subsequent interpretation within the study context. Thematic analysis (TA) was applied to the ethnographic findings in this research to search for patterns in the data.

4.4.2 Thematic Analysis Overview

Braun and Clarke's (2006) six phase approach to thematic analysis was used to analyse the ethnographic data in this research. A summary of the six-phase approach is provided in table 4.6 and detailed discussions of the stages of TA follow this overview.

TA embraces several principles; sources of data include field observations and interviews, and researchers are required to reflect on their role in the research process (Braun *et al.*, 2014). Based upon this, TA was an appropriate analytical approach to interpret ethnographic data and to promote reflexivity (discussed in 4.4.10 *Reflexivity*). TA is flexible and compatible with constructionist paradigms, which examine how events, realities, meanings and experiences are reflected in discourses within a society (Braun & Clarke, 2006). Therefore, TA compliments the philosophical perspective

adopted in this research. TA is an active process, beginning with familiarisation of the data collected and ending by contextually writing up the research findings as situated within current literature. The latter of which is indicated by Paradis *et al.* (2013) as an indicator of ethnographic research quality.

Table 4.6 Six phase approach to Thematic Analysis (Braun & Clarke, 2006)

Phase	Activity	Related Tasks	Analysis in this research
1	<i>Familiarisation with the data:</i>	Reading and re-reading the data.	First-hand data collection. Verbatim transcription of observations and interviews, including reflexive and analytic notes. 100% of field notes researcher transcribed and 80% researcher transcribed overall. 255,363 words of data generated from transcription. Iterative approach informed future observations and interviews. Conceptual maps were used.
2	<i>Coding:</i>	Initial coding of the entire dataset, then collating codes and relevant data extracts.	Manual coding by hand. Data derived codes. Sections of data were coded to retain the context of data. 10% of transcripts coded by supervisors for improved reliability and trustworthiness
3	<i>Searching for themes:</i>	Examining the codes and collated data, to identify significant broader patterns of meaning; collating data relevant to each candidate theme.	Candidate themes were developed from coding, and were captured with thematic maps, and then presented as early findings in a research poster (appendix 10.5).

Table 4.6 continued

4	<i>Reviewing themes:</i>	Checking the candidate themes against the dataset, to ensure that they tell a convincing story that answers the research question. Themes may be refined, split, combined or discarded.	Candidate themes were set up in NVivo™ software to check them against the data. All codes were revisited in the entire dataset, and autocoded by heading. Themes were organised into hierarchical trees with overarching themes, themes and subthemes (figure 4.4). Central organising concepts were refined in NVivo parent node memos to define each overarching theme. Coding stripes identified code repetition and refined themes. Thematic maps visually organised analysed data.
5	<i>Defining and naming themes:</i>	Developing a detailed analysis of each theme; choosing an informative name for each theme.	Central organising concepts helped to name themes. Detailed analysis occurred, using NVivo functions such as coding stripes and word searches, identifying relationships within the data.
6	<i>Writing up:</i>	Weaving together the analytic narrative and data extracts; contextualising the analysis in relation to existing literature.	Parent nodes (overarching themes) were aggregated with child nodes (themes and their subthemes) in NVivo. Coding was retained by ordering by heading and it was exported into the thesis document and written up into the finding's chapters 6-8. TA at the latent level is consistent with the constructionist paradigm, as the analysis is contextualised with existing literature in chapter 9.

4.4.3 TA Phase 1: Familiarisation with the Data

According to Braun and Clarke (2006), the first phase of TA is familiarisation with the dataset. In this research, familiarisation was achieved through collecting data as a lone researcher, transcribing 80% of the transcripts (with 20% transcribed externally), listening to audio recordings of interviews, reading, re-reading and analysing transcripts by hand, then later analysing within NVivo, and using conceptual maps to organise and explore findings. Data familiarisation enabled opportunities to raise questions in interviews and guided iterative analysis. Iteratively analysing transcripts informed subsequent interviews and observations generating ‘high-level conceptually abstract’ themes with ‘rich meaning’ (Birks & Mills, 2015), complementary to the aim of ethnography to develop rich description (Fetterman, 2010). Analysis began during the first field visit, with analytical memos and reflexive comments integrated into field notes. Whilst this detail is not specifically articulated in the six phases of TA, Braun and Clarke (2006) acknowledge that analysis starts when the researcher begins to notice and look for meaning in data, and this can occur during data collection.

4.4.4 TA Phase 2: Coding

The second phase of TA is coding. Coding generates concise labels to identify key features of the data, pertinent to addressing the research question (Braun *et al.*, 2014). Initially, all transcripts were coded manually by hand, codes were derived from data and were constructed to reflect key facets of the research (an example is included in appendix 10.1, 10.2). The coding approach was chosen to reflect the ethnographic data collected and to align with the research aims and methodology. Initially, open coding, which is consistent with constant comparison, was commenced using a line-by-line approach to name each line of data (Glaser, 1998). However, it quickly became apparent that, rather than seeing everyday life patterns and hidden assumptions that

would otherwise remain undetected (Charmaz, 2014), the line-by-line approach deconstructed the meaning of the ethnographic data and prevented patterns from being observed.

Constant comparison of data using a line-by-line approach was not an appropriate analytical choice for this research. To retain the context of the rich ethnographic data, larger sections of data were coded. This process has been referred to as ‘block and file’ (Grbich, 2013) and ‘segment-by-segment’ analysis (Charmaz, 2014). For each observation and interview, reflexive comments and analytical notes were written which Conte *et al.* (2015) explains can capture researcher reflections and develops theoretical ideas. These were analysed as part of the dataset. Hand coding of data was completed after the verbatim transcription of field notes and interviews; conceptual maps helped to become familiar with codes and themes (discussed in 4.3.6 conceptual maps) and 10% of transcripts were reviewed by supervisors (2 field notes and 2 interviews) to ensure reliability, rigour, and trustworthiness to the analysis. Literature was reviewed to theoretically frame the interpretation of findings, and analysis was iterative alongside data collection, in line with the inductive thematic analysis approach (Braun & Clarke, 2006).

4.4.5 TA Phase 3: Searching for Themes

The third phase of TA involves searching for themes. Themes have a wider level of meaning than codes, and different codes are combined to create themes (Braun *et al.*, 2014). Codes were grouped by similarity to represent and illustrate the cultural patterns observed, and at this stage of TA, Braun and Clarke (2006) indicate that broader patterns are identified in the collated coded data, and candidate themes are created to

provide meaning to the codes. Candidate themes are early attempts at making sense of the data and are refined in the fourth phase of TA. This was the stage where conceptual mapping was particularly useful to develop thematic maps to capture candidate themes from fieldwork observations and interviews (appendix 10.3). Braun *et al.* (2014) emphasise the benefits of using visual mapping to develop thematic maps when searching and reviewing themes in the data.

More recently, Braun and Clarke (2019) have favoured the term ‘generating (initial) themes’ rather than searching for themes, to make the point that themes are not pre-existing entities awaiting extraction from data that has not been analysed. Themes that are well developed are complex and require researcher knowledge of qualitative research paradigms and methodology, interview techniques need to be effective to produce rich data that contain participant experiences and exemplars, and the analysis must extend beyond descriptive accounts of participants’ statements (Connelly & Peltzer, 2016). Themes in TA reflect intensive ‘analytic work’, created by researchers’ actively and subjectively intersecting data and analytical processes to produce themes as analytic outputs (Braun & Clarke, 2019). Therefore, in a lengthy active analytical process, themes were generated, reviewed, defined, and named.

Transcription checks further informed construction of candidate themes, and provided an opportunity to complete any missing text, to ensure accuracy and to engage critical thinking when the data could be seen as a whole. At the end of each transcription check, I captured any candidate themes. Charmaz (2014) concurs that reading entire transcripts can ‘net several themes’, but states that to generate ideas that can be built upon, line-by-line or segment-by-segment analysis is required. Generating themes

therefore required iterative movement between the segregated codes, conceptual and thematic maps, and the broader context of the completed dataset.

The preliminary findings constructed from the three initial stages of thematic analysis were disseminated at a national conference (appendix 10). The process of constructing candidate themes and presenting early research findings to an audience with a poster presentation facilitated this third stage of TA. Jones and Smith (2017) suggest that presenting preliminary findings at conferences challenge assumptions drawn and strengthens ethnographic data analysis. This research dissemination activity aided analysis and theoretical interpretation of the ethnographic findings, promoting the review of candidate themes which occurs in the fourth phase of TA.

4.4.6 TA Phase 4: Reviewing Themes

The fourth phase of TA reviews candidate themes and checks them against the dataset. To aid this process in this research, NVivoTM qualitative software was used. The entire transcribed dataset of 40 Microsoft Word documents was uploaded into the software. The documents additionally contained images captured in field notes, and these also formed part of the analysis. The candidate themes were set up as parent nodes, and data was autocoded by heading to check their fit against the research aims and questions, and to ensure they captured the cultural patterns identified through data analysis. Braun and Clarke (2006) refer to this as ensuring the themes tell the story of the research, answering the research question.

The richness and detail of the ethnographic data analysed in this research is reflected in the construction of overarching themes, themes, and subthemes, which are organised

in hierarchical trees within NVivo (figure 4.4). This structure creates a visual thematic map which is shown at the start of each findings chapter to illustrate analysed themes.

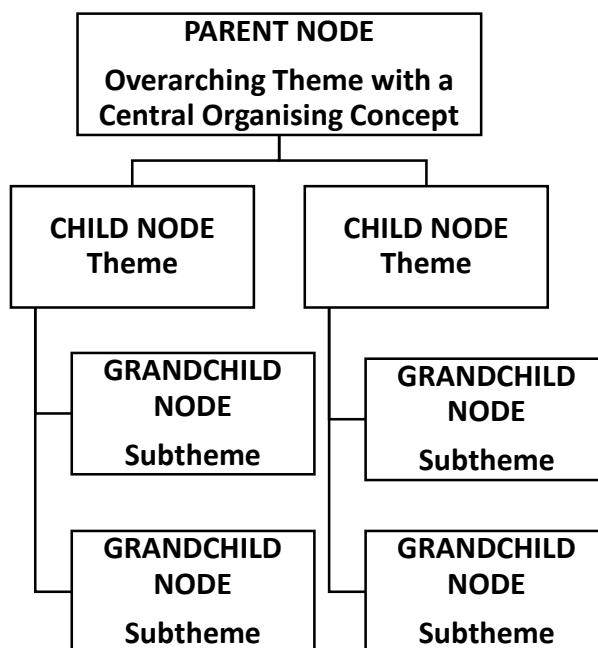


Figure 4.4 Data organised by hierarchical trees within NVivo

Braun *et al.* (2014) defined overarching themes as ‘umbrella concepts’, which contain themes organised around central organising concepts; themes are made up of subthemes and these share the same central organising concept and highlight distinct aspects of the theme they form. Central organising concepts are defined as clear central ideas that underpin a theme, representing the themes essence (Braun & Clarke, 2013) and they ensure themes are distinct and internally coherent with the ‘overall analytical story’ (Braun & Clarke, 2006). In this research, the development of central organising concepts was aided by conceptual and thematic mapping processes, and central organising concepts were refined by creating definitions within parent node memos in NVivo for all overarching themes (figure 5.2 and appendix 10.3, 10.4). This ensured the umbrella concepts for each overarching theme were unique.

Coding stripes were a useful function in NVivo, indicating coding density, and this was used to identify repetition of codes in themes and subthemes. This ensured that codes were distinct, and that they were grouped within the correct themes. Where repetition did occur, more detailed analysis was required and sections of data could be coded more extensively, in smaller sections producing more codes and organising data into different themes. Appendix 10.6 illustrates this, in addition to illustrating how NVivo memos were used to record analytic decisions documenting the audit trail of analysis as data was input, coded by heading and placed within candidate themes. The third overarching theme is shown in appendix 10.6 as an example of how the data themes were organised within the NVivoTM software, and how codes were organised into distinct themes.

4.4.7 TA Phase 5: Defining and Naming Themes

The fifth phase of TA involves detailed analysis of the themes, ensuring clarity in the labels and names given. Coding stripes helped to define and check the names of the themes in this phase, in addition to considering the participants terminology from the data collection and the definition of overarching themes within the central organising concepts. This phase of TA additionally identified and reviewed analytical relationships within the findings as they were refined in NVivo, and iterative analysis of the rich descriptive ethnographic data indicated relationships between themes that were not apparent initially. For example, this meticulous and insightful process accounted for the discarded fourth candidate theme of '*Holistic IPL*' as a relationship and as a key finding across the dataset rather than a discrete theme.

The word search tool in NVivo was used to explore relationships in the dataset. For example, one word search of the aggregated dataset suggested that critical care staff focused on patient centred care (PCC) as much as IPL, reinforcing the finding that PCC was a driver underpinning motivation for IPL. Detailed analysis of themes in NVivo identified many key findings and analytical relationships, which were intrinsic to all themes, and which were only generated following detailed analysis. Examples of these include the presence of an IPL climate, and patient safety and PCC as fundamental drivers for IPL; these are discussed in the findings and discussion chapters (chapters 6-9).

To complete the analysis stage using NVivo, I concluded the process by reading every NVivo node, I checked for duplication with coding and ensured that each extract of data was selected and coded to the correct NVivo heading based upon the central organising concept for each overarching theme. Detailed analysis of the themes constructed analytical findings and generated relationships between themes. To track my analysis progress, I used a colour coding system in NVivo for each node level (parent, child, and grandchild):

- red showed the section was yet to be reviewed,
- amber indicated that the reviewing of overarching themes, themes and subthemes was partially complete,
- green was applied when all of the data had been organised into parent (overarching themes), child (themes) and grandchild (subthemes) nodes as shown in figure 4.4. This signified the completion of the data analysis.

4.4.8 TA Phase 6: Writing Up

The final stage of TA is to write up the analysis, integrating and contextualising extracts of data in relation to existing literature. Analysing the ethnographic data within NVivo™ software was a long thorough process, and upon completion of the fifth phase of TA, all of the parent nodes were then aggregated at the child and grandchild nodes. This meant that each overarching theme had all of the coded extracts of data linked at the corresponding hierarchical levels, maintaining the organisation of the coded and themed data that had been done in NVivo. In essence, all of the hierarchical trees of coded themed data could be maintained, and all of the data in each overarching theme could be exported into a word document to begin the process of constructing and ‘writing up’ the analysed ethnographic account.

Within this thesis, the inductive interpreted findings are presented in chapters six to eight and ethnographic data is weaved into the ethnographic account. Chapter nine, the discussion chapter, contextualises the analysis with existing literature and presents TA at the latent level. Latent TA, consistent with the constructionist paradigm, identifies underlying theory and ideologies which informed the interpretive work of the analysis (Braun & Clarke, 2006). Writing up the analysis using this structure presents the semantic descriptive data within the findings chapters with reference to data extracts and presents the cultural patterns and interpreted relationships between them as each overarching theme is presented. The discussion chapter seeks features in the data that give meaning through latent TA by contextualising the analysed data and research findings within existing literature and theory. This final phase of TA enabled a rich, systematic and trustworthy account to be produced to further current understanding of the way adult critical care staff learn together in their natural clinical environment.

Analysis of ethnographic data identified relationships and gave critical insight to IPL culture in adult critical care, positioning the research findings within existing literature.

4.4.9 The Detailed Audit Trail

The noted complexity of ethnographic data analysis (Fetterman, 2010; Tavory & Timmermans, 2009; Reeves, 2008) required a highly organised and systematic approach to data collection and analysis. The detailed trail of analysis needed within ethnographic research to promote reliability (Jones & Smith, 2017) is illustrated in table 4.7. This table gives an overview of the seven iterations of analysis that an initial code in this research transitioned through, from the point of initial coding of a noticed phenomenon, to the presentation of key findings from the analysed research. In table 4.7 the iterations are associated with an example in the final column, and this corresponds to the detailed exemplar provided within appendix 10.8.

Table 4.7 Seven iterations of analysis

ITERATION	DESCRIPTION OF ANALYSIS	AN EXAMPLE
Noticed Phenomenon	A phenomenon is noticed during the data collection & is coded.	Interprofessional Instruction
Analytical Reflections	The phenomenon is reflected upon & analytical notes are made to prompt further exploration & analysis	QUESTION: Can staff learn from interprofessional instructions?
Further Instances	Observations & interviews are explored to recognise the phenomenon to understand cultural patterns in the data	68% of data transcripts discuss interprofessional instructions
Participant Perspectives	Participants discuss the phenomenon during observations or interviews to gain insight into the situation & to balance researcher interpretations & seek the meaning of the phenomenon	Rationales promote IPL with instructions, whereas learning from instructions alone is more challenging.

Table 4.7 Continued

Analytical Links	Whilst recognising cultural patterns & finding meaning, relationships to other themes are identified	Trust & rapport affect sharing rationales that explain instructions & promote IPL
Conceptual Mapping	Conceptual mapping makes sense of codes & critically analyses researcher reflections & finds relationships	Instructions are better with a rationale. Participants link rationales to increases in IPL, knowledge & improved patient care
Key Findings Presented	Key findings need to be relevant to practice; this can be achieved through the clear articulation of established relationships or with development of theoretical frameworks or models.	The CAUSE Decision-Making Model: designed to provide a format for integrating rationales to instructions and decision-making to improve IPL, enhancing the safety and quality of holistic patient centred care

4.4.10 Reflexivity

Researchers influence the conduct and interpretation of ethnographic fieldwork (Reinharz, 2011) and ethnography acknowledges the researcher as the main research ‘tool’ (Allen, 2004). The researcher role is pivotal to the course of research, affecting the field, the research topic chosen, the means of accessing the field, the theoretical approach taken to study and the ethnographic writing style adopted (Van Maanen, 2011). Reflexivity elucidates the researcher role within the context of the social world studied, considering influences on data interpretation and knowledge of the field (Pellatt, 2003).

Savage (2000) views ethnography as both contextual and reflexive, and whilst the context to understand events and meaning is important, she considers reflexivity as the effects that researchers and research strategies have upon findings. Reflexivity is linked with quality; Charmaz (2014) concurs that recognising the influence the researcher world view can have on research can improve impartiality within the findings and enhance research quality. Reflexive comments influenced data analysis and informed the themes constructed (Fetterman, 2010; Savage, 2000). Including reflexive accounts in the data analysis shows what happened during the ethnography (Pellatt, 2003), improving its dependability as previously discussed. Reflexive comments were analysed as part of the data collected in this research to enhance trustworthiness and criticality of the research.

Researcher presence can influence the phenomenon being studied (Coffey, 1999; Reinharz, 2011). Reflexivity captures perceptible changes in participant behaviour during periods of observation, referred to as ‘consequential presence’ (Emerson *et al.*, 1995), ‘reactivity’ (Leslie *et al.*, 2014) or the ‘Hawthorne effect’ (Fetterman, 2010). Ethnographers need to collect data that describes cultures as they usually operate (Fetterman, 2010). Sustained observation prevents reactivity and the Hawthorne effect, as a result of trust that is developed with participants, producing rich contextual data (Leslie *et al.*, 2014). Caution was used to avoid disrupting participants’ routines in this current research. Reflexivity examples are in appendix 12 and the insider and outsider perspectives regarding researcher reflections are discussed in the final chapter (section 10.1 *Researcher Reflections*).

4.5 Ethics

Like all social research, ethnography needs to be undertaken with care and attention to ensure participants interests are safeguarded (Reeves *et al.*, 2013b). As a complex environment, critical care research required thorough ethical planning.

4.5.1 Ethical Approval

Northumbria University issued ethical approval for the research, HRA approval was granted to access the NHS trusts, and lastly, the research departments in each hospital confirmed capacity for the research (appendix 1). Additional forms were required from each hospital and the university issued a research passport for access, including clearance from Occupational Health. Approval permitted up to 36 interviews and 18 observations over 12 months. Multiple research sites increased the complexity of ethical approval, evident in the elongated process. However, this process resulted in enhanced ethical and methodological quality, as the numerous stages progressed, and the research design was closely critiqued.

4.5.2 Ethical Considerations

Ethical considerations were paramount in the sensitive complex critical care environment, featuring significantly from the inception of the research design, throughout fieldwork and in conjunction with dissemination of research findings. Bryman (2012) discusses ethical challenges in research with regards to harming others, invasion of privacy, deception, and lack of informed consent. All healthcare settings, including critical care, prioritise patients and their families (GMC, 2019; HCPC, 2016; NMC, 2018; SfC/SfH, 2013). Therefore, the research design recognised their presence and vulnerability, but did not adversely affect care. As an additional layer of

reassurance in view of the presence of vulnerable patients, DBS (Disclosure and Barring Service) clearance was obtained prior to commencing data collection.

The research was staff focused; therefore, patients and relatives were excluded from data collection. Nonetheless, their central and permanent presence within the environment was acknowledged, recognising the potential effects research could have on patients in critical care. Ethnography usually focuses upon special features of daily life within the environment, such as ward rounds or meetings (Reeves *et al.*, 2008). Maintaining focus on the interprofessional interactions in daily practice helped to minimise direct patient contact. With consideration of relatives' presence, one solution was to avoid areas of the unit they occupied, wherever possible. This required discrete positioning among team members and high levels of situational awareness.

Critical care raises additional ethical implications in relation to undertaking research in the presence of unconscious or critically ill patients. Confidentiality extends to patients and relatives regarding any information generated or shared by participants during observations and interviews. In line with the nursing code of behaviour (NMC, 2018), and legislation such as the Data Protection Act (UK Parliament, 1998) and more recently General Data Protection Regulation (European Parliament, 2016), all personal or sensitive information was anonymised and only retained if relevant to the study. As a 'third party' to the research, patients were present but were not intended to be directly involved in ethnographic observations. Therefore, concerns for the acutely unwell or unconscious patient giving consent were minimised. Patient consent was only verbally sought on one occasion throughout the entire research. In this situation, verbal informed consent was gained from a conscious patient, in the presence of both the

nurse and doctor at the bedside, as I sought permission to watch the insertion of a central line whilst the patient was lying in his bed, with an open curtain.

Researching in critical care required ethical conduct. Nurses need to act as a patient advocate (NMC, 2018), and patient confidentiality, respect and dignity took precedence over research interests. For example, there were numerous occasions with great potential for IPL in a patient's bed space. However, to observe an emergency, such as the cardiac arrest that happened during a ward round, would cross the line of respecting patient privacy and confidentiality at such an invasive and critical time. I was additionally aware my presence might adversely affect the quality of care provided. As each clinical situation arose during fieldwork, I made a judgement to move away from incidents as they transpired, and sensitively gauged whether situations could be discussed or discreetly observed from a distance. The ability to make this decision was informed greatly from my experience as a critical care nurse and was integral to gaining the trust of staff in the team.

4.5.3 Professional Role Conflict

The researcher role required clear and cautious definition (O'Reilly, 2009) and I acknowledged potential conflict that could arise. Professionally, I was perceived by participants from three positions during this research: research student, academic educator, and critical care nurse. These roles influenced the research at times, and to safeguard the patient's best interests, it was clearly articulated that no involvement with patient care would occur. As an NMC registrant, professional and ethical obligations ensure patients are unharmed (NMC, 2018). In critical care, despite being there as a researcher, different aspects of my role were drawn upon by participants and I was regarded in different ways. Reflexive comments in field notes captured instances

of these, and care was taken to undertake the research ethically (see section 10.1 *Researcher Reflections* and examples in appendix 12).

4.5.4 Consent in Ethnography

It is difficult to obtain individual consent from participants in ethnographic observation (Price, 2013). Undertaking 90 hours of ethnographic observation in three critical care units meant it was impractical and not possible to obtain written consent from individual participants. The challenge was compounded by the unpredictable nature of critical care, with frequent staff movement in and out of the unit, resulting in inconsistent staffing levels (Paradis *et al.*, 2013; Paradis *et al.*, 2013a; Philpin, 2006).

To overcome these challenges, several approaches were taken to optimise consent processes and to raise awareness that the research was taking place so that staff could make informed decisions to partake or to opt out. No staff members formally opted out of the research, but this section, section 10.1 *Researcher Reflections*, and appendix 12 provide examples where staff were given opportunities to opt out or actions were taken to exclude participants in the study. Once ethics had been approved for the research by the university and the Health Research Authority, and after each hospital research department confirmed capacity for the study to take place in each critical care unit, meetings were arranged in every research site to make key introductions to potential gatekeepers, such as nurse managers, consultants, and research nurses. Following meetings, gatekeepers informed the critical care staff about my research verbally and via email communication. These introductions were needed to begin the process of consent for observation.

The one-hour environmental visit was a precursor to longer periods of observation and was a step taken to begin preparing participants for observations, to talk about the research and to give staff more information to enable them to provide informed consent in subsequent field visits. To further raise awareness of my presence as a researcher doing overt observation of the critical care staff as they worked, several documents were developed to advertise the study and to provide information about the ethnography. During the environmental visit, participant invitation cards (appendix 6) were placed into staff rooms along with posters in the unit (appendix 5) to advertise the research during data collection periods and to inform staff they could opt out of the research by contacting me, two of the three supervisors or ward managers. Details about the research design had been previously disseminated regionally and nationally at conferences using research posters, and staff from all research sites were amongst conference attendees (appendix 5 and 10).

Verbal consent for observation was gained wherever possible and appropriate (Reeves *et al.*, 2015), through frequent introductions and explanations of the research. An observation consent form was created, and whilst available, this was not used by participants (appendix 2). The consent form and all relevant research information was kept in a research file in each critical care office throughout the data collection periods so that it was always accessible to critical care staff who wanted to know more about the study or who wanted to opt out. Staff were informed that they could access the file, read the contents, or ask questions to find out more about the research. The file contained the participant information sheet (appendix 4), among other documents relating to ethics and the research study. Staff were presented with options to opt out of the research, at any time, without disclosed cause or consequence (van der Arend, 2003). Staff were informed verbally and within the research file that their participation

was voluntary, questions could be answered by me as the principal researcher or the supervisors and contact details were provided in all documents.

The observation schedule (previously discussed in section 4.3.2 *Observation Schedule*) was agreed with the ward manager at the start of each observation period and was entered into the research file and added to the critical care unit paper diaries so that staff on shift could see planned research visits in advance. The intention was that advanced knowledge of the planned research visits gave staff the opportunity to opt out of pending observations. Despite these measures, many staff remained unaware of the research. During observation periods that included handover, I was introduced to staff and they were made aware that I was conducting research about IPL during the shift. I introduced myself to all staff finding appropriate times to explain that I was undertaking research and sought verbal consent to attend specific interprofessional events such as MDT meetings or ward rounds. In every unit I encountered resistance from senior medical staff. The situations were managed by candidly articulating the focus of the research and emphasising that participation was voluntary. Appendix 12 and section 10.1 *Researcher Reflections* illustrate several examples of reflexive field notes that relate to access and consent, including explaining the research to gain consent for observation, making introductions for consent and relating to acceptance within each critical care unit. An NVivo™ screenshot in appendix 12 demonstrates the aspects of gaining access in relation to the researcher role that were captured and analysed within the data collected.

Field notes captured the challenges experienced in gaining consent during ethnographic observations, and they shed light on the complexities associated with this methodology and method of data collection. On several occasions, researcher intuition

and professional expertise were required to gauge the appropriateness of observation and to interpret participants' intentions for consent when consent was not made explicit or formalised. I used my professional judgement to carry out observations. Every ambiguous consent experience required different management, and all participants had the opportunity to opt out of the research, whilst nobody formally opted out. However, there were many situations that I judged as inappropriate, or where my role as an observer was perceived as unwanted; in these circumstances I did not pursue the observation, did not seek verbal consent, and moved away from the area, disregarding it from the research. A key example of this occurred during a patient cardiac arrest in a cubicle which was deemed as inappropriate to observe on ethical and moral grounds because staff members could not consent sufficiently to the observation whilst safely and effectively managing the patient emergency. Staff were also able to move away from me in the unit if I was in a prominent static position undertaking observation, such as the nurse station, and there was one incident when two doctors moved into a private office space away from the nurse station to discuss a patient case. This was perceived as them taking action to opt out of the research observation by moving away from me. There were additionally moments that I observed that had no relevance to the research topic of IPL, so they were not documented into fieldnotes. Reassurance of confidentiality was an important part of the consent process (discussed in the next section) and whilst the consent form was available for observation (appendix 2), it was not used during the study.

The complexities of gaining consent for observation were managed with the provision of advanced and open detailed information about the research study in the documentation developed and in the research file, which was housed in each unit for

four months, through consistent verbal communication and by applying professional judgement about the appropriateness of observations.

By contrast, consent for interviews was less complex. Participants that agreed to interview were provided with a participant information sheet (appendix 4), so they could give informed consent by initialling the consent form for interview (appendix 3). Upon completion of the interview, if consent was revoked, participant's data was retrievable at any stage using unique identifier codes (UIC) which they were emailed.

4.5.5 Confidentiality and Data Protection

During research, there is a risk that participants will disclose sensitive information. To safeguard confidentiality and ensure professional support, all information gathered was anonymised and individual participants remain unidentifiable within the thesis by referring to professional roles only. Coding confidential data, for example using UICs, protects participant identity and prevents information 'falling into the wrong hands' (Fetterman, 2010, p. 147). Audio files of participant voice recordings during interviews and corresponding transcriptions were saved using the six-digit UICs. Participants were emailed their UICs, so they could leave the research or trace their dataset at any time, and their anonymised data could be withdrawn from the research if requested. Field notes and written data were stored within locked filing cabinets, and electronic data was held securely within password encrypted computer accounts and within password protected NVivoTM software.

Additional ethical safeguards for participants included having options to pause recordings during interviews, and to refer staff to Occupational Health teams if it

appeared they needed support. If a participant disclosed unsafe patient practices during the research, in line with NMC registration and patient safeguarding, it was clearly stated within the participant information sheet that incidents of this nature would be reported using the appropriate NHS Trust policy for that particular hospital.

4.6 *Summary*

In this chapter, approaches to sampling are described and the data collection methods of partial participant observation and semi-structured interviews are presented, together with an overview of the templates and guides developed to facilitate these research methods. The phases of thematic analysis used to interpret the ethnographic data are described and ethics regarding the professional conduct of the research is discussed. The chapter that follows, is a preface to the findings and profiles the three research sites studied, describing the presentation of findings in the thesis.

CHAPTER 5: PREFACE TO THE FINDINGS

This chapter gives detailed description of the critical care units that participated in the study as a preface to research findings. Information in this section was obtained from first-hand observation, field notes, discussions with participants and from formal documents and sources, such as CQC (Care Quality Commission) reports and hospital websites. The chapter closes with an overview of the presentation of research findings in chapters six to eight (*Embedding IPL / Collaborative IPL / Humanising IPL*).

5.1 Research Site Profiles

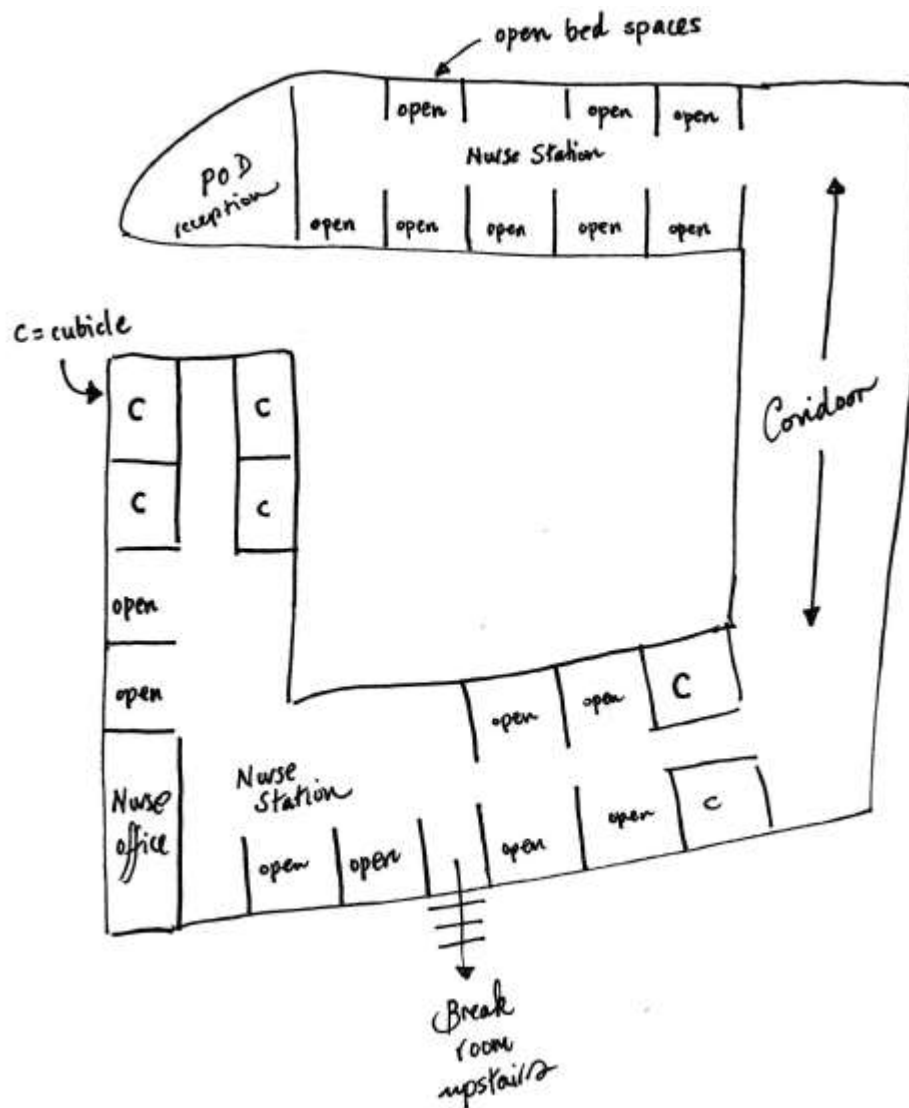
The three research sites (RS1/2/3), chosen from nineteen critical care units in the North of England, are numbered by the order they were researched and involved a Teaching Hospital (RS1), District General Hospital (RS2) and an Acute Hospital (RS3). Each site differed in terms of staffing numbers, hospital bed capacity and type of NHS Trust organisation. The variety in these fieldwork areas, captured in field notes, improve the potential transferability of findings, but also the richness of the data collection, fulfilling the methodological demands of ethnography (Reeves *et al.*, 2008).

5.1.1 RS1: The Teaching Hospital

The first critical care environment was a large integrated intensive care unit (ICCU), in a Teaching Hospital. At full capacity, RS1 operated with 22 critical care beds (ten Level 3 and twelve Level 2), with a comparable mix of patient admissions following elective surgery or resulting from complex medical conditions; this was a busy critical care unit. Employing over 130 nursing and HCA staff, the nursing workforce in RS1 met the national guidance for staffing levels. Daily optimal staffing levels for doctors were achieved, with two consultants leading the unit alongside multiple critical care

residents, including ACCPs (advanced critical care practitioners). Physiotherapists formed a large team, with extended roles, that visited twice a day.

All unit layouts were drawn during environmental visits within field notes:



Field Note 1: RS1

RS1 had four sides; at its centre there was an outdoor courtyard overlooked by several patient rooms and an internal corridor separated both sides of the unit. The environment was spacious; comprising a mixture of open bays (open) and enclosed cubicles (C) along two sides of the unit, and there were two wide nurse stations. The

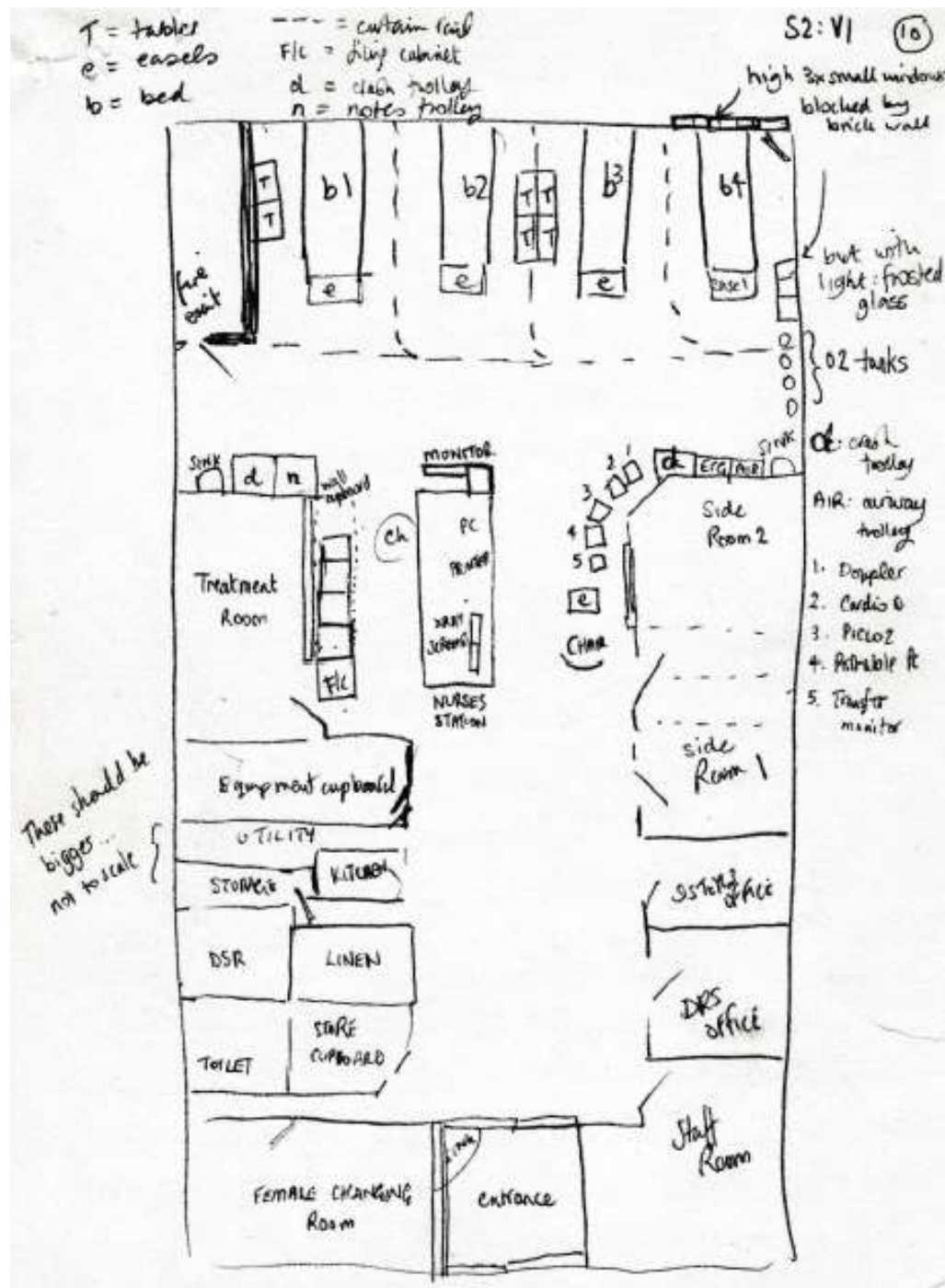
nurse stations attracted numerous professions due to the space available to sit down or stand to write patient notes, to access computers, to use telephones and to generally locate and talk with each other. The visitor waiting area and reception were both external and completely separate to patient and staff areas, and the unit was accessible through two swipe access electronic doors. The staff break room and manager offices were separate from the immediate critical care ward area, and a number of other rooms were utilised for facilities such as storage and medication.

Environmentally, every bed space had windows but, on one side of the unit, the windows faced a brick wall, therefore it was darker. Externally, the unit had numerous large glass windows in place of walls, and glass walls overlooked the central courtyard. This affected light levels and influenced the internal unit temperature, essentially rendering the unit a 'greenhouse' on days with extensive and prolonged sunlight. RS1 had air conditioning installed and water coolers at the nurse stations to manage environmental extremes. Temperatures were often elevated to high levels, making the working environment uncomfortable for staff and patients. Noise levels influenced the environment and varied by area, time of day and the level of patient care.

RS1 housed different professions, all wearing distinctive uniforms dependent upon professional role. The professions had undergone significant role extension; this was evident with the integration of critical care associates (CCAs), physiotherapy assistants (PAs) and ACCPs. For the study, staff with extended roles were categorised by their affiliated professional regulatory body; therefore, CCAs were grouped with HCAs, and ACCPs registered with the NMC were affiliated with nurses. Additionally, a range of other healthcare specialists were present, including nursing and medical specialists.

5.1.2 RS2: The District General Hospital

RS2 was a small critical care unit in a District General Hospital, providing Level 2 and 3 patient care, with capacity for six patients: four in a small open bay and two in side rooms. Four beds offered Level 3 patient care and two beds provided Level 2 care; however, it was openly recognised that admission criteria were flexible, to reflect patient demand during peak periods of patient admissions but, equally in response to delayed discharges out to hospital wards. The nursing and HCA workforce had 35 staff, and whilst national staffing ratios were maintained, this was to the detriment of the nursing leaders whose continual presence in the clinical setting prevented time to fulfil managerial activities. The medical team was led predominantly by one consultant anaesthetist, and there was one critical care resident doctor and numerous junior and trainee doctors. The physiotherapist team had recently experienced instability in their provision, leading to appointment of a new leader to implement rehabilitation and deliver training. Physiotherapists visited twice a day, covering the whole hospital site.



Field Note 7: RS2

Upon first impressions, RS2 appeared 'exceptionally small and crowded' (Field Note 7). The narrow rectangular ward had one main entrance. This led onto a central corridor, with several small rooms either side, before reaching the patient bed areas at the far side of the unit. Two adjacent side rooms, near to the small nurse station, were situated perpendicular to the four-bedded patient bay. Due to a distinct lack of space,

many of the side rooms had multiple functions. The doctors' office doubled as a shared space, used for meetings and as an interview room for families and patients to have private, sensitive, and confidential discussions. The treatment room was the site for nursing shift handovers and for other tasks, such as organising documentation for staff inductions and educational competency packages. A small visitor room was available for families outside of the unit near the entrance, but with space restricted it had limited functionality. It was clear upon the first environmental visit that the size of RS2 was challenging for the operational functions required for critical care provision and did not meet published guidelines (Department for Health and Social Care, 2013) (discussed further in 6.3.1 *Physical Factors*).

Within RS2, natural light levels were limited. Small rectangular windows at the top of the nursing bay walls allowed some natural light to enter, but there was no view for staff or patients within the unit. Noise was not usually excessive but remained constantly in the background with the presence of machinery and conversations. It did however, become very loud quite quickly if there was a peak in activity, due to the confined space within which people were working. With the small windows and open bay, environmental temperature was difficult to regulate at times. It was noted that staff had no access to drinking water immediately within the patient areas and no air conditioning unit was installed. The kitchen was close to the patient bay, and staff had adapted their practice to get drinks when needed, by covering for each other and 'looking on' for patients.

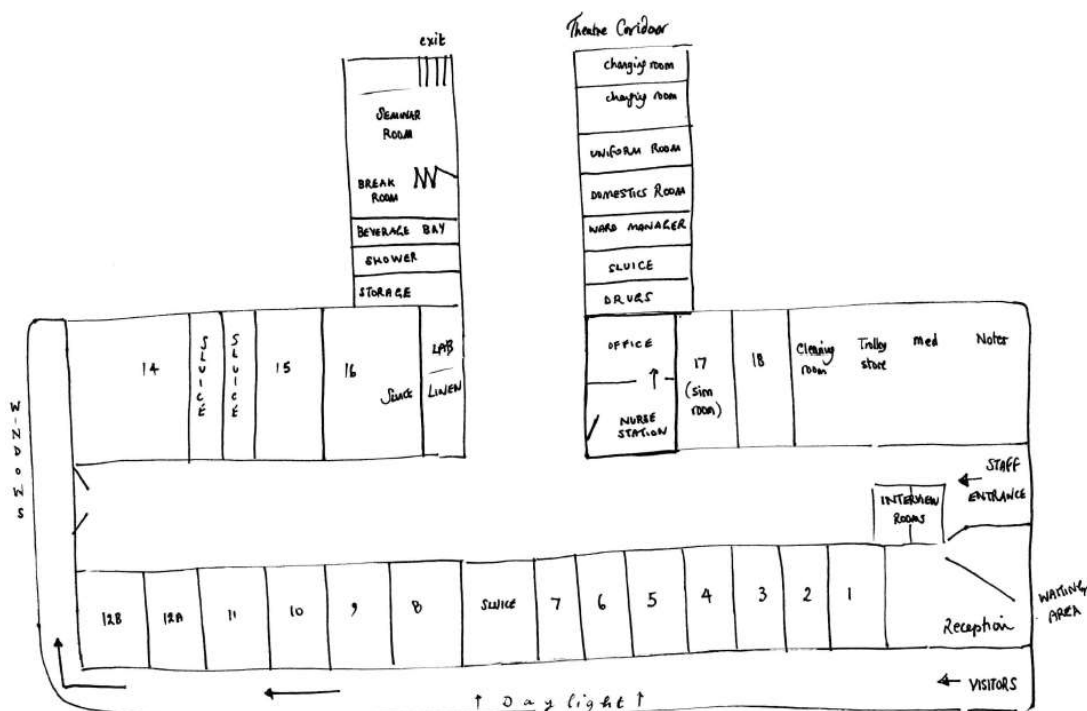
A lack of variation in staff uniforms made it initially challenging to recognise interprofessional interactions. Many professions wore the same clothing; for example,

nurses and doctors wore scrubs. Whilst there was an apparent absence of certain key staff members within the local team, such as dedicated pharmacists, Band 8a nursing managers and educational lead nurses, the complement of an established critical care outreach team (CCOT) was beneficial to the interprofessional interactions between staff and appeared to further support critical care patients and their families.

5.1.3 RS3: The Acute Hospital

RS3, in an Acute Hospital NHS Trust, was the most modern of the three fieldwork areas, having been operational for around 5 years at the point of data collection. RS3 occupied a large space, housing 18 separate patient rooms and multiple staff spaces. As an ICCU it offered Level 2 and Level 3 patient care, and the environmental design enabled adaptability as service needs fluctuated. A maximum of ten Level 3 patients could be cared for, and approximately half of all patient admissions required this intensive level of care. The unit continued to function below its maximum capacity, which had been the case since it opened, and this compensated for shortfalls in staffing or competence levels that were experienced. Whilst medical staffing levels aligned with national guidance, with eleven consultants appointed and six trainee doctors in post, nursing teams were less populated. Discussion with participants revealed that a significant number of experienced staff nurses had left and, to remedy this, a successful recruitment drive had attracted high proportions of junior staff nurses. So, whilst the size of the nursing team had increased, the ‘skill mix’ and ratio of critical care competent nurses had been compromised. This attributed to the perceptible need for nurses in particular, to learn in this environment. RS3 had a designated critical care senior physiotherapist, on shift for over five hours a day, making him visible and accessible to the team. This lead physiotherapist worked autonomously with two other junior physiotherapists from the hospital team and patient care was delegated amongst

the small group. The wider physiotherapy team utilised a rota-based system across other hospital areas and staff shortfalls were covered by this team.



Field Note 13: RS3

This modern unit was long and spacious and was a 'T'-shape. There were two unit entrances; both were wide, spacious and light. One was used for staff access and the other had a receptionist and large waiting area for visitors. Two interview rooms next to the waiting area enabled private conversations to occur between families and critical care staff when needed. An additional corridor ran from the visitor's waiting room, giving access to half of the patient rooms on the unit via a separate route to staff. The critical care team tended to congregate in the midsection of the unit, which was essentially a long wide corridor with glass walls and white light. The unit design was contemporary and clinical in appearance, giving the impression of a highly organised and technical medical setting. The glass walls used for every room were innovative in design; they were sound proofed for patients within bed spaces and had an electronic

opaque function to give privacy in place of blinds or curtains. A double office was positioned in the centre of the internal corridor and perpendicular to this, another corridor ran off it, with additional rooms such as office spaces and a staff break room. It was acknowledged that, due to the unit consistently operating below the maximum capacity for admissions, there were always empty rooms. The team had equipped one room for insitu simulation. The staff room, as a large and multifunctional space, doubled as an educational seminar room, although the room divider was broken and permanently open during the research period.

The RS3 design promoted enhancements to patient care, such as patient privacy and infection control measures; however, these contemporary developments created challenges. One of the greatest challenges observed related to the use of separate glass rooms. In situations where staff were extensively working in these enclosed areas, the line of sight for other patients and staff members in the unit became limited. Another challenge created by the glass walls related to noise levels. For patients and relatives within rooms, the sound proofing was deemed beneficial. However, for staff working in the midsection of the unit, sound travelled over long distances and during periods of activity with multiple sources of noise, it became almost impossible to hear colleagues talking, making it difficult to engage in interprofessional conversations.

There were no external facing windows in the main section of the unit. The light was predominantly artificial, and small strip lights were very bright. Several overhead light panels offered a range of lighting levels and some skylights were in place to improve natural light levels, but regardless of this, the environment felt extremely bright. With no fresh air entering the unit, the internal temperature was often elevated. The air

conditioning unit had not been successfully installed at this point, and there were no water stations for staff within the ward area. All of these factors were reported as challenges for the critical care team working within the clinical environment.

With high visibility in the midsection of the unit, larger groups of interprofessional interactions, such as ward rounds, were noticeable. Noise levels became particularly elevated during these times and the interprofessional team moved as a dominating collective group through the unit. The lead physiotherapist, who had worked in the unit for over a decade, was well-known to the team, and worked independently. The autonomous physiotherapist role rendered him superfluous to the interprofessional ward round, and he avoided interprofessional interactions. Despite this uniprofessional approach to working, one perceived benefit of having a designated physiotherapist was that he often became accessible to others during the daily routine of patient care. Typically, there were many professions present in the unit and these often included the CCOT, Rehabilitation after Critical Illness (RaCI) staff and other visiting multidisciplinary team (MDT) members, such as microbiologists or pharmacists.

5.2 *Presentation of Findings*

The three overarching themes from the thematically analysed findings are presented as an ethnographic account in chapters six to eight. Figure 5.1 illustrates the three overarching themes and their themes presented in each chapter. Themes reflect the cultural patterns studied across all research sites following reflexive analysis of field notes and interviews. Criticality in the account is enhanced by the integration of pertinent literature and theory as data was collected and analysed, as demonstrated in the conceptual map of educational theories in appendix 11. This critical approach enhanced the depth of iterative analysis as the ethnographic research progressed.

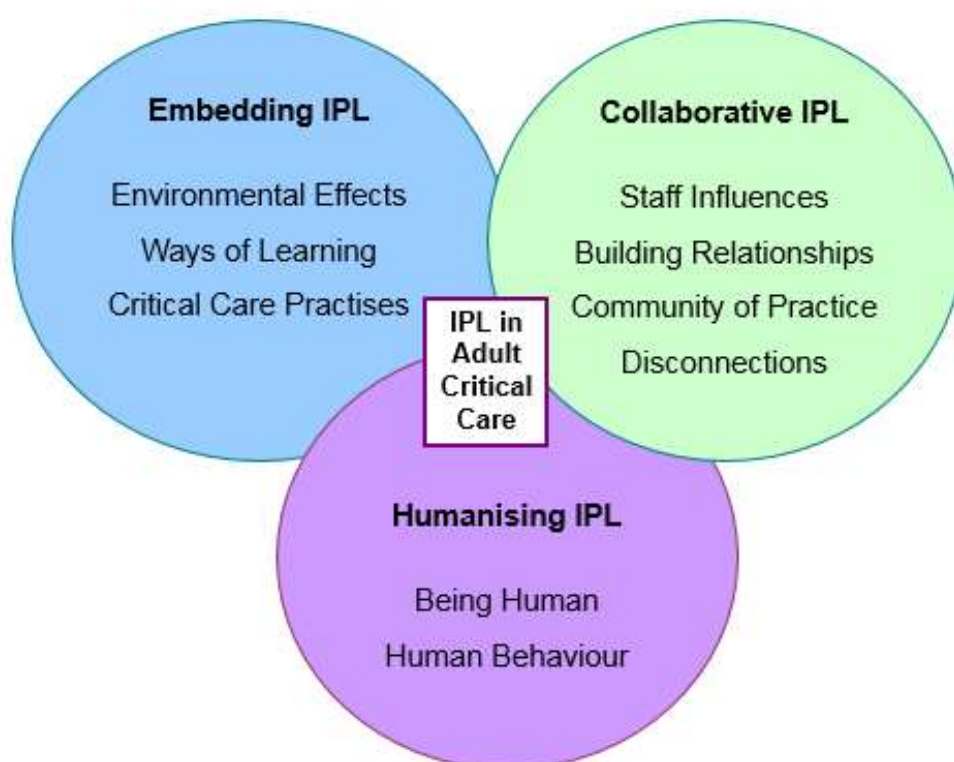
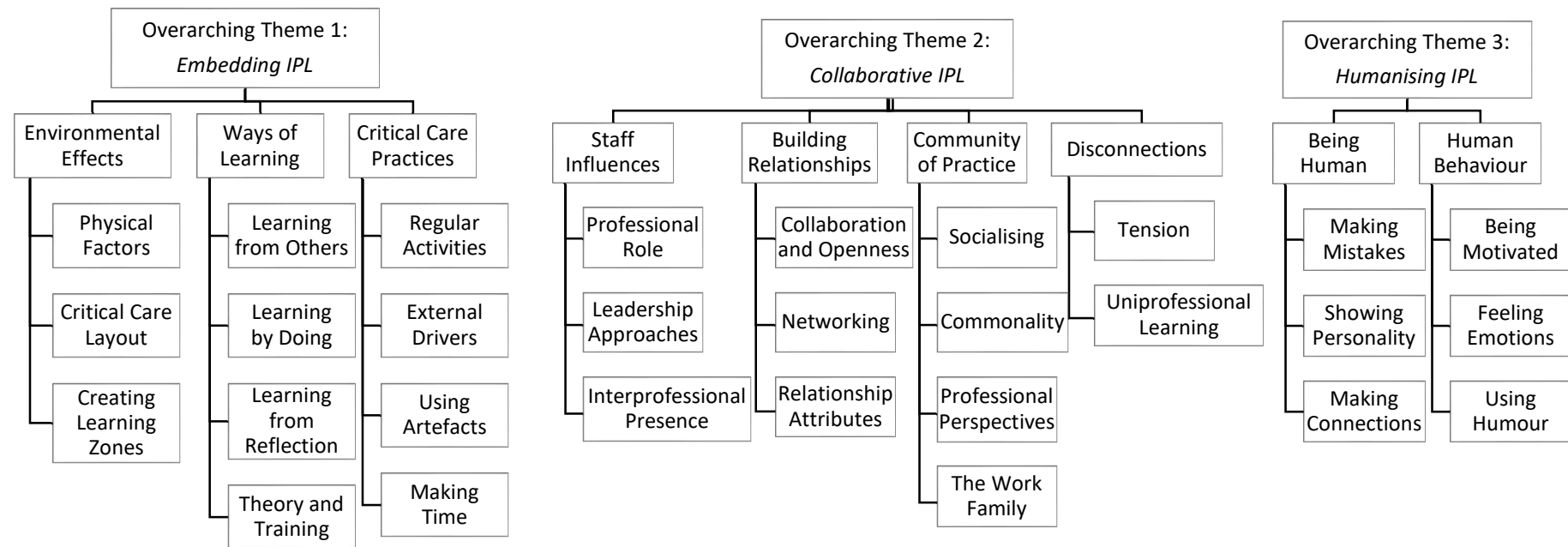


Figure 5.1 Overarching themes and themes

Differences between research sites are noted in this chapter with respect to environmental layout, uniform, configuration of staffing levels, critical care bed capacities, professional roles, and the type of NHS Trust organisation. However, as a focused ethnography, research sites are not directly contrasted in other chapters preserving the confidentiality of sites. This approach maintains fidelity of the focused ethnographic methodology, providing rich description that focuses on one distinct cultural aspect (Cruz & Higginbottom, 2013).

Each findings chapter begins with a description of the central organising concept (COC), describing the essence of the overarching theme (Braun & Clarke, 2013). In the thesis, each overarching theme is made up of themes represented by chapter headings, and each theme is constructed by subthemes, denoted by chapter subheadings. A visual thematic map of findings for each overarching theme is provided in each chapter and the complete thematic findings for the research are mapped in figure 5.2 overleaf.

Figure 5.2 IPL Culture in Adult Critical Care: *A thematic map of findings*



Central Organising Concepts		
Overarching theme 1 captures the different ways that IPL is embedded into the learning culture of adult critical care. It considers the learning environment, opportunities to integrate IPL into daily critical care practices and the ways IPL culture can be enriched.	Overarching theme 2 acknowledges the finding that learning between professionals is enhanced with collaboration. Collaborative IPL explores factors which influence how people work together and interact in relation to IPL in adult critical care.	Overarching theme 3 emphasises that health professionals are people first. Being human fortifies IPL in adult critical care and people within a system or organisation can influence IPL culture by virtue of being human.

Chapter six, *Embedding IPL*, illustrates the context of IPL culture in adult critical care and adopts a semantic and descriptive approach as the ethnographic account describes the data. Chapter seven, *Collaborative IPL*, and chapter eight, *Humanising IPL*, are conceptual and interpretative in nature, reflecting how analysis progressed. Data extracts in these chapters follow a more constructionist analytical approach, identifying more implicit and latent meanings in the data, in view of theoretical literature (Braun & Clarke, 2006); for example, theoretical concepts such as CoP and LPP are integrated into the findings in these latter chapters.

The findings chapters aim to present a rich ethnographic account, describing the IPL culture within adult critical care. As previously outlined in chapter three, *Methodology*, the intention is not to compare different critical care unit practices, or to contrast the different professions perspectives and experiences of IPL; the chosen methodology of ethnography seeks to demonstrate deep insight into the culture being studied. Whilst quotes used within the text recognise the profession who made the comment, the inclusion of the interview number and the affiliated profession is intended to demonstrate the richness of data, rather than provide comparison. Key terms taken from data are denoted by inverted commas ‘’ and are used to ground the discussion within the rich ethnographic data, minimising researcher bias, and represent participants’ perspectives. Transcript conventions are detailed on page 11.

The ethnographic data from field notes, reflexive commentary, conceptual mapping and semi-structured interviews, is situated in the narrative of the findings chapters. Van Maanen (2011) describes the serious intellectual and moral responsibilities that come with the ethnographer’s representation of a culture, emphasising the lack of

neutrality in ethnographic writing. He describes ethnographic writing as complex, multifaceted, and dependent on researchers' strategic choices and active constructions:

"The trick of ethnography is to adequately display the culture (or, more commonly, parts of the culture) in a way that is meaningful to readers without great distortion." (Van Maanen, 2011, p. 13)

The ethnographic findings reflect the underpinning philosophical standpoint of social constructionism, the methodological perspectives of interpretivism, and presents the culture of IPL in critical care as a 'realist tale' to represent the social realities of participants that have been constructed from within the field of study (Van Maanen, 2011). The extracts selected from field notes and interviews represent the range of research sites and professions, capturing collective participant perspectives, in addition to any exceptions and singular viewpoints to provide rich ethnographic description. Focused ethnography is not a comparative study or a case study, therefore the critical care units that participants work within are not explicitly articulated or contrasted in the writing. Instead, interview numbers and profession names are used to showcase the range of participant perspectives provided regarding the IPL culture in critical care.

5.3 Summary

This chapter profiles the three adult critical care environments selected for the focused ethnography. The context of each critical care environment is presented in terms of different staff numbers, critical care bed capacity and the type of NHS Trust organisation. Critical care unit design, environmental factors and the professions working in critical care are considered. The ethnographic account is described in terms of the presentation of findings, and cognisant with the focused ethnography approach, the following findings chapters (Chapters 6-8 *Embedding / Collaborative /*

Humanising IPL) integrate the varying research site qualities to address the research aims and question, and the discussion chapter that follows (Chapter 9 *Discussion*) further interprets the findings, situating them into the context of current literature and theory.

CHAPTER 6: EMBEDDING IPL

Chapter six, *Embedding IPL*, is the first of three findings chapters. This overarching theme recognises adult critical care as a knowledge rich environment, with extensive opportunities to embed IPL into daily critical care practices. Three themes constructed from the findings showed that opportunities to embed IPL into critical care are influenced by the place and its environmental effects, different ways of learning and critical care working practices.

6.1 Chapter Overview

The chapter begins with rich description of the environmental factors that influence IPL opportunities. The critical care environment influenced IPL regarding physical factors, the critical care layout, and the creation of learning zones. The ethnographic account captures the varying ways of learning between interprofessional staff. The chapter draws to a close as critical care practices are considered, in terms of the IPL opportunities presented in daily routines, influenced by external drivers, artefacts in the environment and the relationship with time.

6.2 Visual Thematic Map of Findings

A visual thematic map of findings for the first overarching theme is presented below:

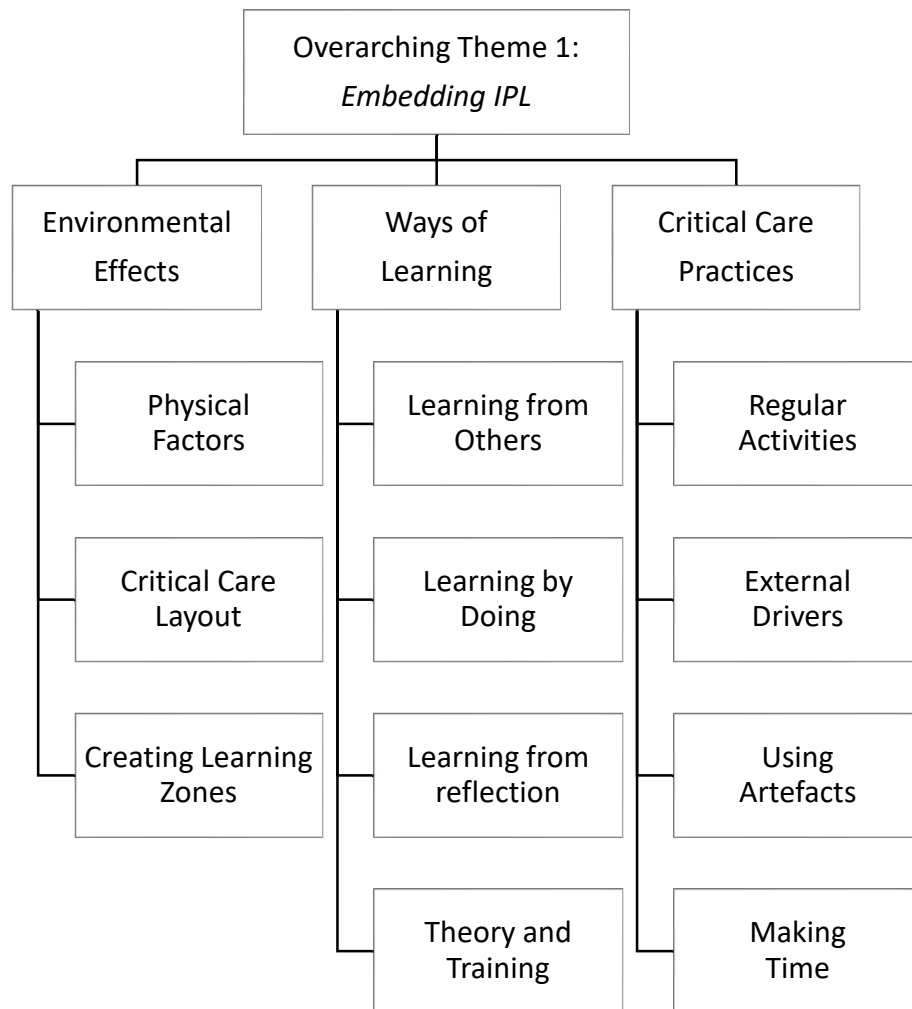


Figure 6.1 Visual thematic map of findings: Embedding IPL

6.3 Environmental Effects

The findings distinguish a relationship between the environment and IPL. The theme is explored with the following three subthemes: *Physical Factors*, *Critical Care Layout* and *Creating Learning Zones*.

6.3.1 *Physical Factors*

Four key areas relating to the physical environment influenced IPL culture: space, light, noise, and temperature.

Space was valued by research participants; as illustrated in chapter five: *Preface to the Findings*, the three research sites varied in size and design. Findings show the challenges and benefits to IPL associated with available space. Restricted space, with lots of equipment, deterred IPL opportunities at the bedside. A nurse explained it was too hard to teach colleagues without access to equipment (Interview 10). A doctor indicated there are natural limits to bedside teaching, but increased space enables more people to gather around equipment, such as ventilators or dialysis machines, giving them a better view (Interview 17). Staff struggled to find places they could ‘learn and develop’, around or away from patient bedsides.

In terms of having places to learn in critical care, a doctor explained insufficient dedicated learning spaces on, or near to, the critical care unit prevented IPL because nurses could not access external learning opportunities:

“If I had a seminar room, within short distance to the patients, then probably some of them could attend, like they go for lunch break for example and others look after their patient. We could do the same thing for teaching as well if they were closer, but in the [anaesthetic] department, it’s too far away I guess”

Interview 17 Doctor

During a RS2 observation, a nurse explained the unit did not meet recommended government guidance for critical care unit design, where every critical care bed area should have an area of around 650m² (Department for Health and Social Care, 2013).

The CQC report, given to me by the nurse, indicated that the unit was operating with one third of the recommended area for patient bed spaces, with a bed area closer to 80m². The nurse explained that over time, as critical care service demands had increased, the infrastructure of this unit outgrew its capacity (Interview 12). He linked insufficient space to the unit's outdated design, dating back over 30 years; this resulted in limited bed space, poor storage and a unit not designed for twenty first century care.

Spaces specifically purposed for learning varied in the units. An HCA described the value of having a dedicated room for learning to avoid people "disturbing you when you're trying to learn" (Interview 11). In this exemplar, the treatment room was being used for teaching and learning, adopting a dual purpose for storage and education, creating regular disruption. Restricted spaces in critical care were modified to become places of learning; when space was constrained, staff were creative with their use of different areas to embed IPL opportunities into their daily work. Rooms adopted additional purposes becoming multifunctional, for example, treatment rooms became places for handover, for learning, and even for staff to take short periods of respite. Offices became meeting rooms, areas for MDT discussions, handovers and for small group teaching sessions.

Additional challenges associated with limited space included patients and relatives overhearing IPL in the bed space. Participants expressed concern from a confidentiality perspective, but also in terms of disturbing patients with low level disruption, especially since they were confined to the clinical area. Priorities of care affected IPL when space was constrained. An HCA gave an example of a medical ward round being interrupted to make space for a patient care activity, emphasising "the

patient's more important" (Interview 11). Any IPL in the ward round was perceived with less importance than immediate patient care priorities. This focus on PCC supports the subtheme *Commonality* in the overarching theme *Humanising IPL*, and critical care staff articulated a shared value of placing immediate patient care above learning activities.

When space was limited, staff in closer proximity were more aware of IPL opportunities. Staff could 'take advantage' of opportunities as they arose, whereas such opportunities were invisible to those working within cubicles and side rooms:

"(In an open bay) you're probably more aware of learning opportunities that are going on in the four-bedded area, than what you are up in the side room. ...you're probably more likely to notice it."

Interview 10 Nurse

In large units, spatial challenges were overcome when interprofessional members of the team could be easily located. A doctor substantiated the belief that longer units did not make it harder to interact with other professions if staff resided in expected places, such as patient bedsides or in the office (Interview 20).

Space in the environment influenced IPL and was one physical environmental factor affecting IPL culture. Light was another physical environmental factor and all three sites differed regarding light sources and the adjustability and intensity of light levels. Participants associated light to team morale and the unit atmosphere, but the influence on IPL was not apparent. When questioned, staff admitted they had not considered a relationship between light and learning, usually light related to patients' perspectives. One consultant emphasised how powerful the patient voice could be on subjects such

as environmental light and noise (Interview 21). This shared outlook, that light and noise levels can be detrimental to patients, further reflects the priority that patients were given by critical care staff, supporting shared values of holistic PCC (see 7.5.2 *Commonality*). The shared goal to prioritise patients, led to a patient centred approach to care in all areas, but links between IPL and light were challenging for participants to explain and interview questions were used to explore the influence of light levels on IPL.

Staff described benefits from accessing and managing light levels. Large windows connected staff to the world outside, to the weather, the time of day and the season. Newer buildings, often associated with brighter internal environments, were preferred over smaller, darker interiors. Participants indicated that light levels could relax people in the environment, for example a physiotherapist explained how “it’s so relaxing” when the atmosphere is ‘airy’, ‘light’ and ‘bright’ (Interview 16). Being able to adjust lighting, through the use of dimmers, different light sources or window coverings, enabled the team to optimise levels of light, usually for patients’ benefit. One nurse linked natural light to them feeling a little ‘more human’:

“[When] you don’t see any daylight, it’s awful. Whereas on here, it just makes you feel a bit more human. Sometimes, when, and even on night shift, you can see a light at the end of the tunnel, when the sun’s coming up in the morning”

Interview 5 Nurse

Staff appeared initially unaware of any direct relationship between environmental light levels and IPL; fieldwork observations intimated a number of potential influences. When probed, participants reported that light could influence an individual’s mood and, subsequently, the wider team’s morale, influencing the interprofessional

interactions that occurred. Relaxed interactions between happier staff increased the time spent together, raising the potential for IPL opportunities. Whilst exploring light levels and IPL, a physiotherapist articulated that environmental factors overall were of insignificance to the broader context of embedding successful IPL into critical care culture. This perspective marginalised physical environmental factors, and placed more value on the time, opportunity, and cohesiveness of the ‘multidisciplinary team’ as fundamental components for successful IPL (discussed in chapter 7: *Collaborative IPL*):

“[Optimal light levels] might do [improve the learning environment] but I think there are other, more important things that make multidisciplinary learning more of an opportunity. I think you could have the worst building in the world, and the worst unit in the world, but if you’ve got the sound MDT, who have the time and opportunity and make the most of those opportunities to learn from each other, then you will do that [engage in IPL] regardless of what the building [is like].”

Interview 6 Physiotherapist

Noise levels in critical care ranged from a low constant background level to very high levels for sustained periods of time. Noise was affected by the size and infrastructure of the critical care areas, by patients’ stability and by the people and equipment within the environment at any given moment. Noise was influential on IPL when it affected the quality and frequency of interprofessional interactions, particularly when excessive noise prevented IPL from happening. Small environments could get loud quickly. The field note extract below demonstrates how staff activity and equipment within smaller environments could induce high levels of noise and disorder:

“Back on the unit: it is noisy. Unplugged bed is beeping, hoover is on, a bed is being wheeled out, staff are literally falling over each other and the equipment. There are closed curtains around a bed space; I’m not sure what is going on. I guess perhaps a ward transfer or putting a patient into a chair?”

Field Note 11

Larger units with hard reflective surfaces became loud for different reasons. With limited soft furnishings and long expanses of glass walls, sound travelled further as it echoed through the unit. One HCA explained that noise ‘bounces’ in such units and they described challenges to maintain confidentiality and privacy (Interview 18). High noise levels deterred IPL, and this became apparent during the observation of a shift handover and an interprofessional ward round, when it became impossible to hear what staff were saying, due to the acoustics and competing noises. Staff were constrained by the environmental design, and the impact upon noise levels made effective communication challenging at times:

“7.30am Handover was taking place in every bed area. It was very loud... I’ve noticed that voices travel really far on the unit; a nurse 4 or 5 rooms away spoke to another nurse and it was loud and clear because there was no background noise at this point. It was so much quieter with handover complete.”

Field Note 14

The nursing shift handover was a recurring intraprofessional interaction and was a memorable sight from the viewpoint of the staff entrance; to witness up to thirteen pairs of nurses repetitively lined up in rows, handing over at the patient easel and being hit by a wall of sound upon entering the unit, as the field note sketch illustrates below:



Field Note 14: Intraprofessional nurse handover

A doctor explained how the physical environment influenced noise levels in the critical care unit and this detrimentally affected interactions:

"But I think, from a sort of purely a physical point it is quite a noisy unit ...so if you have (names 2 staff) speaking to the junior, about what is the result of this, and you have somebody presenting to you, and then a conversation between the staff nurse and the coordinator, everything gets lost."

Interview 21 Doctor

In RS1, one side of the unit was always quiet, confirmed by a nurse who claimed that “even when it was really busy, and even if there was a cardiac arrest, you would never know because the volume of the unit stays so low” (Field Note 5). Field note entries explain this was, in part, due to the internal unit design. The combination of individual rooms, partial walls and curtains, organised in a square shape, separated by a corridor and doors, seemed to quieten any noise. In RS3, I observed that upon leaving the long patient area, it was immediately perceptibly quiet, and staff often taught and learnt in this quieter part of the unit. Quieter areas promoted IPL.

A relationship was intimated between the level of noise and the stability of the critical care patient. I observed that Level 2 patients, who are more stable, had more interactions with people than Level 3 patients, and these lasted longer. When more staff were present in an area there was increased interaction and activity, elevating noise levels. The noise levels themselves were indicative of interprofessional interactions, which were often the means of enabling IPL. This observation highlighted that processes which lead to IPL can in themselves generate noise, as staff talk and learn together; noise is not always detrimental to IPL but can actually arise from, and be indicative of, its presence.

Noise levels were also affected by the time of day. Observations undertaken late in the evening, or at the start of the night shift, suggested that noise was less tolerated by staff at these times. Interestingly, staff often failed to recognise noise levels because they were “actually a part of that noise”, and one physiotherapist said this was a subject she had neither given thought to or noticed, believing that her role as an active contributor to the noise precluded her from recognising it (Interview 6). However, a doctor had

noticed that noise levels caused interruptions in interprofessional conversations (Interview 3). These interruptions could be undesirable, but were necessary to make conversations between people audible; sometimes disruptions were initiated purposively until intermittent noises passed by and this showed respect for the person in the environment who was making the noise:

“When the nurses go past, they will often stop their conversation as they go past [the doctors on the round], so that’s quite respectful and the physios (physiotherapists) will do that as well.”

Interview 3 Doctor

Equipment in critical care created noise; even in the absence of staff activity, the environment was never quiet. Staff were consistently working and learning together, in surroundings with noise levels perceived as suboptimal for IPL. Such insights from participants into the nature of noise in critical care suggested that noise levels did affect IPL, and often noise interrupted the interprofessional interactions taking place.

Another relationship became apparent between noise and heat, as machinery overheated, and internal fans were triggered to cool equipment. Mostly, temperature was discussed in relation to excessive heat levels, with accounts of staff becoming lethargic and disinclined to engage in IPL. In these circumstances IPL was constructed as requiring effort, so it became an undesirable activity. Extreme environmental temperature was therefore constructed negatively as a detrimental factor for IPL.

Poor regulation of environmental temperature was attributed to unit design; with large or closed glass windows, poor ventilation and light levels that warmed the unit. Immediate access to staff drinking water varied, air conditioning units were not widely

installed, and electric fans were notably ineffective as they recirculated warm air. Staff described the detrimental effects that high environmental temperatures had on them physically, psychologically and socially as they “just couldn’t keep themselves hydrated” (Interview 16) and as they tried their “best to think of ways to keep the environment cold” (Interview 11). A physiotherapist explained:

“... [excessive heat] makes people tired, people irritable, makes patients irritable and I think especially on critical care, when it’s usually a little bit warmer down there ... heat had quite a negative effect on everybody ... whether it’s too hot or too cold, if the temperature goes outside of where it is comfortable has a massive effect on morale, learning and just the general feeling.”

Interview 16 Physiotherapist

Fluctuations in environmental temperature were linked to IPL and detrimentally affected staff energy levels, interactions, and motivation (see 8.4.1 *Being Motivated*). When the environment was too hot, learning was difficult because information could not be retained; an HCA claimed that “nothing sinks in”, staff were quieter, interacted less and wanted “to do the work, get it done and go home” (Interview 9). Therefore, numerous environmental factors influenced staff inclination to engage in interprofessional interactions that could lead to IPL.

6.3.2 Critical Care Layout

The critical care layout could foster or inhibit interprofessional interactions. Large open spaces improved staff visibility, but not necessarily proximity (explored further in 7.3.3 *Interprofessional Presence*). The practicalities of working far away from colleagues presented challenges for interprofessional interactions. To overcome this, one consultant explained that in larger units, staff opted to work in smaller teams to manage complex patient care. The area was effectively split into smaller discrete parts,

and this 'known division' enabled smaller teams to work together more effectively (Interview 21).

Critical care layout could be physically adapted, for example by closing doors. This action reduced excessive noise and created a calmer, more intimate atmosphere. This changed the geographical boundaries, the space to work and learn and, to an extent, this became protected; therefore, interprofessional team working was easier and staff rapport increased. In these circumstances, staff benefited from a working environment which offered both visibility and proximity of colleagues, working together in a clearly defined area, being adjacent to other experienced colleagues if knowledge was needed.

Working in cubicles and side rooms reduced the visibility of the staff in an area: the layout could create isolated working and a nurse explained this made the environment unpleasant for staff because of challenges to see each other and to cover for breaks when staff numbers temporarily lowered (Field Note 17). Another nurse explained that when the layout separates staff they feel like less of a team; interactions were harder with side rooms and cubicles, and this was described as being 'unfriendly' (Interview 7). This construction of the 'unfriendly' environment reflects the forced separation of staff because of critical care layout. It differs from previous examples, where critical care staff were able to adapt their working environments to reflect their needs. When the critical care layout induced isolated working practices, this was viewed negatively and was deemed a barrier to IPL:

"...I think you feel a lot like you're working on your own here ...and you do sometimes feel like a completely separate unit because you don't have any interaction, you sometimes feel that people are quite self-sufficient on the two bases with patients as

well, ...so it does feel like two separate teams...but there's nothing stopping people coming out and asking questions. It's not like they're stuck in there and have to stay there, maybe it's slightly more isolated than before ...because if you had the curtains open you can talk to somebody over the top, whereas here you can't do that, you'd have to literally go round and speak to them because they can't hear you through the glass."

Interview 7 Nurse

Staff indicated their preference for a flexible critical care unit layout that reflected how teams operated and worked together, to get the balance right. A physiotherapist preferred the critical care layout that:

"...provides good privacy for patients but it is still easy to get help from others"

Field Note 18

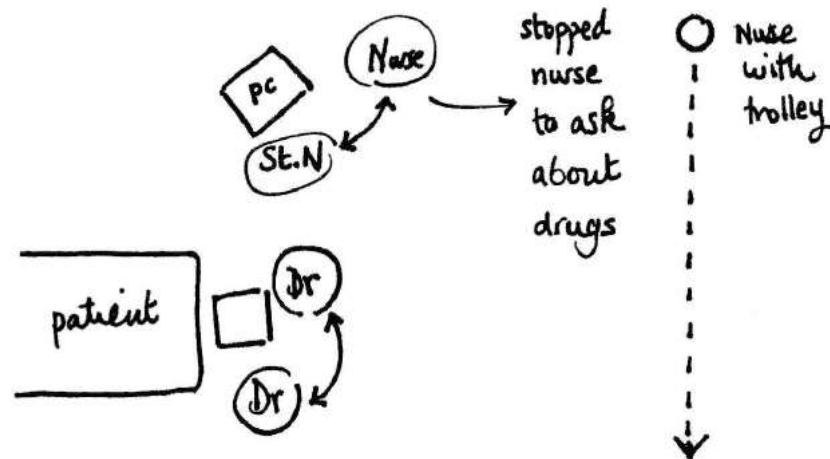
A nurse explained the challenges of connecting with colleagues because of the layout:

"I think I'd prefer more of a department that was curved. Everyone felt close together. Like if the nurses' station was in the middle and it was a circle...If you had an issue, you could literally speak to a nurse, where here we've all got telephones and if you're struggling, you ring for help, or you ring for advice, basically... I think a cluster of people works better because you can work together; you can teach together. Where, on our department, it's one straight line. If you face a patient, that's who your team member is and it's not based on what the patient needs are, because it's mixed between HDU (High Dependency) and ITU (Intensive Therapy Unit)."

Interview 19 Nurse

Interprofessional staff were observed working in clusters, often in specific areas of the environment. In the field notes I refer to these as 'hotspots' of interprofessional activity (discussed in section 6.3.3 *Creating Learning Zones*). Regarding critical care layout, several observations were made. In large units, the further away from the nurse station that staff worked, the more isolated they became and fewer interprofessional interactions occurred. Long wards made clustering challenging, limiting

interprofessional interactions, and staff would often gather at easels and around mobile furniture, such as computers on wheeled units. The field note image below demonstrates how natural clusters of staff formed, and they enabled interprofessional interactions that could optimise IPL opportunities:



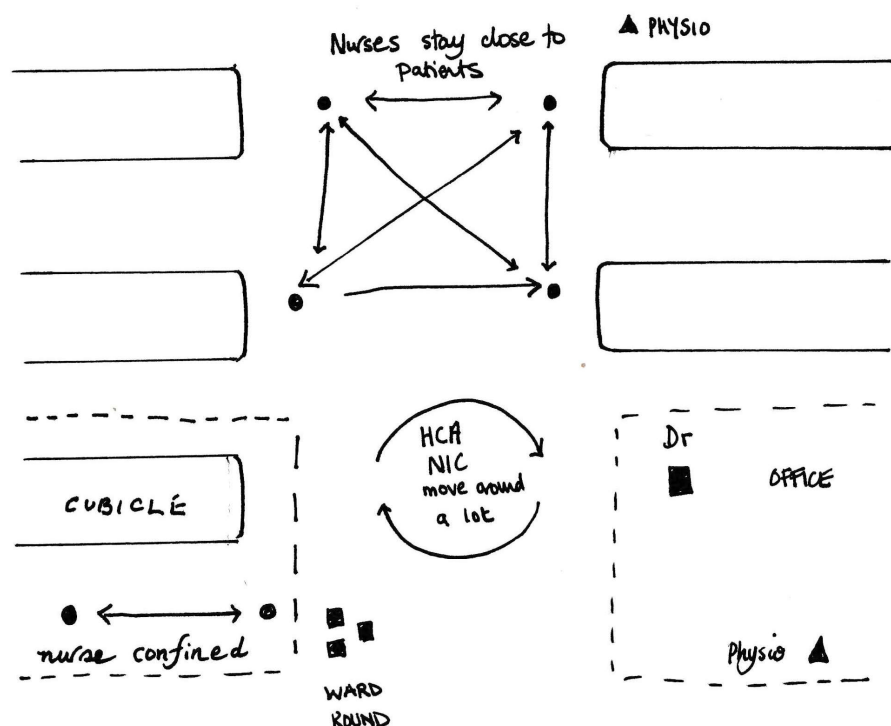
Field Note 17: IPL arising from staff clusters

This field note image shows two doctors communicating at a patient easel at the end of the bed space and, to their right, a staff nurse and student nurse are talking at a computer (PC). A nurse passes with a trolley, and a discussion about medication occurs, made possible by being in a visible cluster. This shows that staff groups naturally clustered together in critical care, dependent upon layout and this demonstrates the enhanced visibility and proximity of interprofessional groups, intimating increased potential for interprofessional interactions that could lead to IPL (discussed in section 6.3.3 *Creating Learning Zones*).

Circulating in different clinical areas was a good opportunity to tap into others' knowledge and skills, to learn about various patient conditions. Whilst a physiotherapist believed the extensive freedom to move between areas was beneficial to learning, she also noted this could be challenging for people; particularly those less confident or newer to an area (Interview 6). Professional roles affected staff movement and physiotherapists were observed to have the greatest freedom, followed by doctors, HCAs and then nurses. The level of care patients required also influenced the freedom for staff to move. The field notes below capture these observations:

"Spaces to meet and collaborate: nurses are confined to patient bed spaces and bays, sometimes working in isolation (e.g. cubicle). Other staff are free to meet and move more flexibly and independently. The nurse is the one constant presence at the patient's bedside but other professionals circulate more freely. Q. Does this freedom/restriction of movement impact on IPL opportunities?"

Field Note 2



Field Note 2: Staff movement in critical care

Physiotherapists worked independently, visiting multiple hospital areas, attaining the greatest freedom to move. However, their interprofessional involvement in critical

care varied, and they were often observed working peripherally, avoiding other professions. All doctors and nurses explained that physiotherapists were welcome to join in activities, such as ward rounds, and a nurse manager explained physiotherapists often declined invitations or were on breaks, so were unavailable. One consultant described how the physiotherapist leader directed colleagues to ‘interesting patients’ providing IPL opportunities (Interview 20). This insight suggests that behaviour that was initially interpreted as freedom to move, could conversely be construed as constrained movement, given the expanse of areas that physiotherapists had to visit within a set timeframe and that physiotherapy leaders often determined IPL activities and engagement, thereby potentially limiting physiotherapists autonomy and freedom to move.

Critical care doctors, whilst linked to units, were able to leave the immediate clinical area between patient care interventions. Doctors moved from bedsides or offices, and their role often took them away from critical care to other hospital locations. HCAs, however, were expected to circulate the entire unit during shifts; the critical care layout heavily impacted their work. An HCA stated the layout of critical care made it difficult to move around:

“You’ve got to run around ... we’re the integrated critical care unit, so we have a mixture (of patient areas)... you can see the staff on the other side if they open the blinds ...we’ve got the intercom system.... It sort of helps connect, if you’ve a lack of staff and you’re in the cubicle... it is hard but yeah, I think the design is just no good. Not good at all.”

Interview 9 HCA

It was difficult to see colleagues inside rooms, there were large areas to cover and the layout added to the frustrations of moving around efficiently. An HCA illustrated this

by taking “57,000 steps in one night shift” showing how far he could travel around the unit (Interview 9) and another HCA had walked over 25,000 steps in one 12 hour shift (Interview 18). Whilst the HCA role to circulate increased their exposure to different professions and patient conditions, the critical care layout was highly influential and presented barriers for HCAs to work around, in terms of promoting interprofessional interactions that could lead to IPL.

The critical care nurse’s role was perceived to potentially limit IPL opportunities. The exception was when nurses were supernumerary or were operating as the nurse in charge (NIC). Nurses’ fixed positions were attributed to their primary responsibility to safely and effectively care for patients:

“I think it does (being a nurse limits IPL). I think they want to do their best for the patient, but at the same time, you can’t just leave your patient and go and do a teaching session in the seminar room or on the corridor. I think you’ve got to have a good understanding of where everyone else is in the job. You can’t just be tunnel-minded ...rather than everyone being disjointed and a patient being left.”

Interview 19 Nurse

This nurse explained their freedom to move was influenced by the presence and behaviour of team members, and nurses needed to know the movements of colleagues, so they could make plans to leave the patient bedside. They could only engage in IPL and teaching if patients were being ‘looked after’ in their absence.

Freedom to move was affected by both professional role and critical care layout. Those perceived to have the greatest freedom of movement, were observed as less present on the unit. Whilst freedom of movement could promote IPL opportunities in critical care,

with staff moving towards and engaging in interprofessional activities at their will, it could equally move them away. Larger units were seen to make circulating a more arduous task, which staff found challenging and frustrating. Additionally, having managers determine IPL engagement, or needing to visit other hospital areas outside of critical care, limited scope to engage in IPL. Therefore, freedom to move was affected by context, as well as the critical care layout in relation to IPL.

6.3.3 Creating Learning Zones

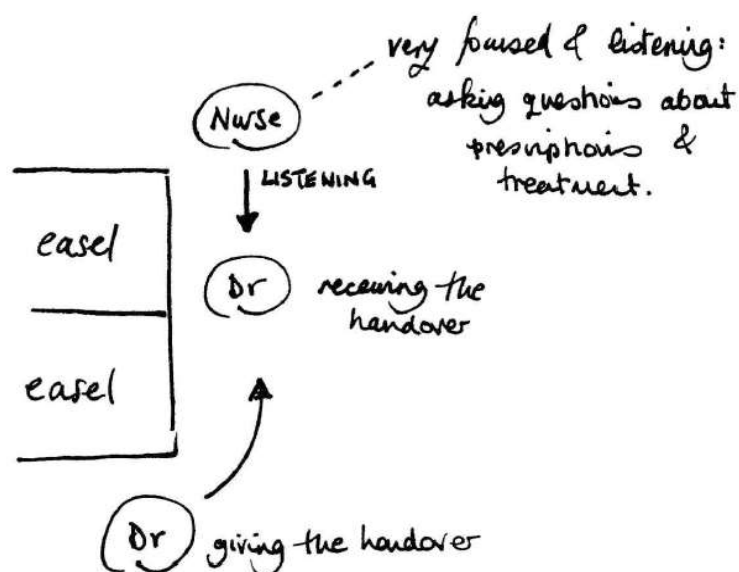
The subtheme *Creating Learning Zones* captures a construction of critical care staff as creative, territorial and inclined to engage in learning when faced with environmental challenges. Specific areas of critical care were used regularly for IPL, and the team created zones of learning when space was constrained, or when the internal layout or staff movement posed challenges. Observed ‘hotspots’ for interprofessional interactions and IPL were explored through discussions. IPL regularly occurred at patient bedsides, easels, workstations, in offices and at nurse stations. Participants’ experiences of IPL in cubicles and the staff break room varied, and environmental challenges were overcome by modifying existing areas, such as treatment rooms and corridors, to create learning zones.

The bedside was the epicentre of IPL for practical teaching due to the patients’ presence. Fieldwork observations captured examples of interprofessional activities offering opportunity for IPL, such as mobilising patients, inserting central lines and learning about equipment and processes. However, a physiotherapist revealed that for IPL to happen, there needed to be more than just interprofessional interactions:

"...around the bed space with the consultant ...other than the nurse who's looking after that patient, we (physiotherapists) kind of stand back, (the ward round) isn't really massively inclusive. I think there is probably loads (of missed IPL opportunities there), absolutely loads. At the end of the day, to be consultants of that kind of spec, and that kind of level, you have unbelievable experience, a huge amount of knowledge; therefore he could be giving us loads of information but doesn't, and, it would probably make me a lot more confident in what I did."

Interview 15 Physiotherapist

Knowledge needed to be shared between staff, and the interprofessional team at the patient bedside could miss IPL opportunities if discussions were not inclusive. Consultants were viewed as knowledgeable, but if the team were unable to tap into this, they missed IPL opportunities and to develop confidence. Intraprofessional and uniprofessional learning at the bedside were common to the exclusion of other professions, and IPL on the periphery was possible. Legitimately learning through peripheral participation and by being situated in the learning environment became possible in situations where staff close to intraprofessional learning activities asked questions and became actively involved in discussions, as shown in the field note:



Field Note 17: Learning from legitimate peripheral participation

Joint interprofessional decision-making, handovers and patient reviews occurred at easels and workstations, at the foot of patient bed areas. Interprofessional interactions often involved sideways discussion as documentation was being completed, and collaborative discussions often followed, which could lead to IPL.

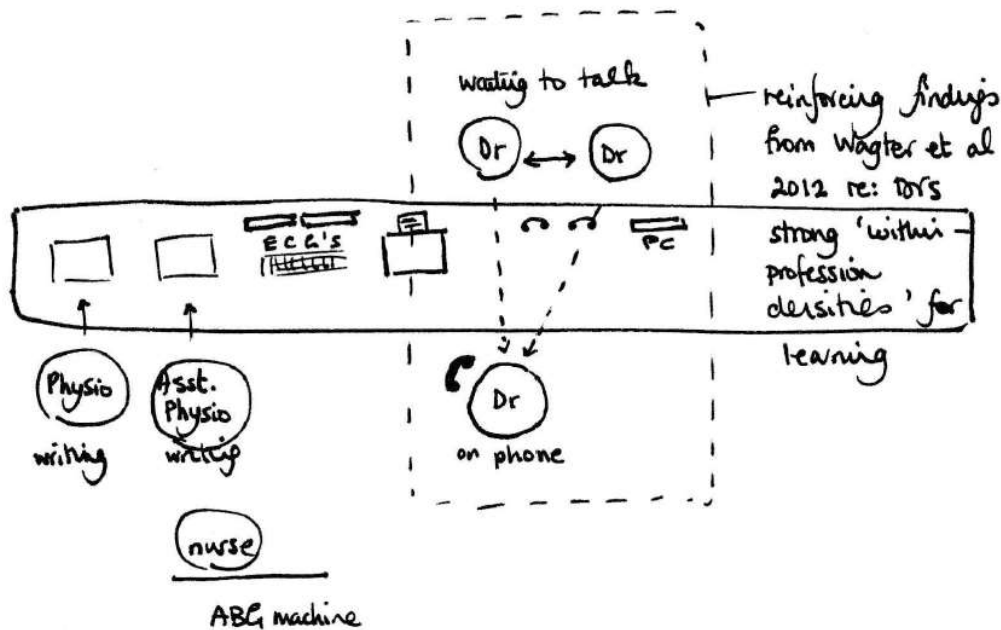
Offices were used regularly for interprofessional meetings and handovers, offering the potential for informal IPL. When offices were integral to the unit and accessible, it was deemed easier for staff to seek the doctors out for IPL. One doctor explained:

“The office is one of the consultants more visible places [to work]. ...We don’t spend a lot of time on the fringes of the ward; either on ward round and if we actually go to see a patient. Other than that, a lot of our focus is around that little room (the doctors’ office).”

Interview 20 Doctor

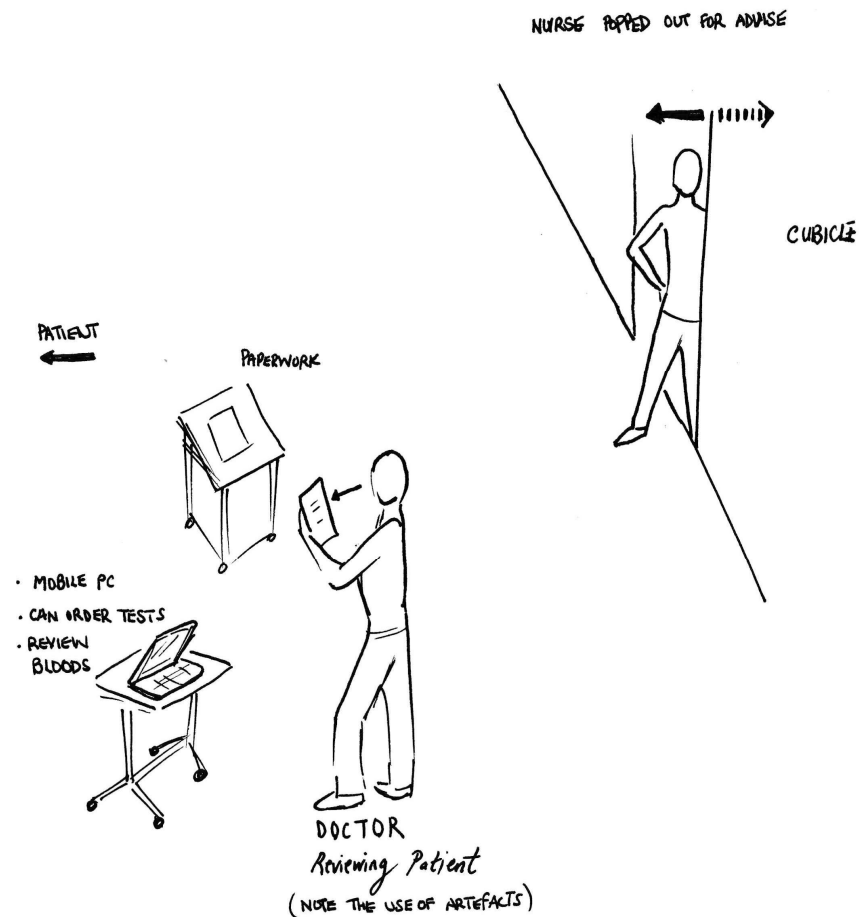
Electronic documentation and systems meant doctors worked in offices, rather than being visible in the clinical area. Interprofessional staff would seek doctors out if assistance was needed. The placement of the doctor’s office was perceived to affect the level of interprofessional interactions and was sometimes referred to as a ‘hub’.

Nurse stations were highly visible, offering space for staff to work and providing opportunities for different professions to be in close proximity. The visibility of professions at the nurse station was claimed to make asking questions and seeking support easier. Many informal opportunities for IPL were observed and, due to the variety of professions using the nurse station, conversations would quickly become rich interprofessional dialogues with great potential for learning. The field note below illustrates how different professions worked at the nurse station:



Field Note 2 Interprofessional presence at the nurse station

Visible areas in critical care were linked to IPL activity. Less visible areas, such as patient cubicles and break rooms, were inconsistently recognised as places for IPL. In interviews and discussions, participants presented cubicles and break rooms as contentious spaces for IPL. On several occasions during fieldwork, I asked participants whether the nurse in the cubicle missed out on IPL opportunities. If interprofessional staff did not readily go to the cubicle, the nurse was challenged with drawing them in. The following field note image illustrates a nurse emerging from a cubicle to get a doctor's attention:



Field Note 2: Nurse gets help from a cubicle

When negatively constructed, cubicles were perceived as isolating places, where rich learning opportunities could not be shared or easily disseminated. For example, a nurse was excluded from a rare learning opportunity in an adjacent cubicle due to the constrained space when a large number of staff responded to an emergency buzzer, arriving with multiple pieces of equipment. A consultant shed more light on situations such as this, and explained:

“There’s often not a lot of space around the bed in the case of the acutely unwell and to have more than one observer would generate [challenges]. So ...the people who are there who need to be there, should be there.”

Interview 1 Doctor

The reasoning that informs this comment can be drawn from the discussion that ‘observers’ are often ‘put to use’ because when adverse events occur with critically ill patients, attending staff ‘need the hands’ and the extra help to effectively care for the patient in the emergency. Therefore, any bystanders who were not actively involved in the patient care, were considered as superfluous with insufficient space for them to observe the situation. This resulted in their exclusion from IPL opportunities.

When positively constructed, cubicles were perceived as rich learning opportunities; providing a protected area for staff to fully concentrate on one acutely unwell adult and learn in depth. IPL was perceived as richer with Level 3 patients when different professions visited cubicles. During one observation, a nurse requested to return to the cubicle for her next shift; she wanted the challenge of caring for the complex needs of a patient, as the field note below captures:

“A staff nurse requested to return to the cubicle the next day. The patient had “lost their airway”. This had been very stressful for the staff. The patient had almost died. ...During the previous nightshift the patient had lost their cardiac output and had experienced a cardiac arrest.”

Field Note 4

IPL experiences differed in the break room with frequent educational discussions; these were informal and conversational or could involve formal presentations and teaching. A nurse explained people would ‘squeeze’ in teaching during staff breaks (Interview 19). Representatives also did training in the break room, which was observed during fieldwork (Field note 15). Break room teaching made learning possible by overhearing conversations. In the unit that had a seminar room attached to the break room with a broken central room divider, teaching sessions could not be separated from staff on breaks. A doctor recognised the potential for learning through

LPP, by being situated within an area with learning. The following interview extract captures how intraprofessional learning or spontaneous interprofessional dialogues, can lead to IPL for staff listening to educational conversations:

“...senior nurses will give teaching sessions sometimes, often just to the staff nurses. But there have been a couple of times where I’ve been eating lunch and just listened in, but actually it’s not advertised to us, if that’s the right word? ...so I think sometimes the learning is often multidisciplinary and people working together. But actually I think in the formal learning set, everyone’s got their own little segregated learning.”

Interview 20 Doctor

Specific groups of staff were taught in the break room, often doctors and supernumerary staff. IPL was not achieved in all teaching sessions; for example, medical teaching was regarded an intraprofessional activity and other staff, such as nurses and physiotherapists, did not join in. The extract below shows how physiotherapists were excluded from the doctors’ teaching. It had never occurred to participate; however, there were several examples of nurses openly inviting professions to nurse educational events:

“The medics do the teaching on a morning, which I’ve never thought about joining, but I think it’s very much aimed at the medical staff and the junior doctors. But certainly, the nurses, when they’re having some training done, there’ll be people saying “there’s this training on this afternoon if anybody can attend” and if I want to join that, I’m welcome to join.”

Interview 22 Physiotherapist

Water coolers were a focal point for staff; all professions were observed using the cooler and this increased the number of interprofessional interactions occurring. The field note below illustrates how this focal point enabled a nurse to learn with a doctor during break time:

“15:00 Cuppa. The doctor is in the staff room on their first break all day. There is small talk chatting about the shift, working weekends, etc. The male nurse comes in for water and informs the doctor about a patient’s low arterial oxygen levels. They discuss the quandary that good sats (oxygen saturation) readings are more accurate than Pa O₂ (partial pressure of oxygen) in plasma. The doctor has reached this conclusion by reading an article recently that was posted by a nurse on social media.”

Field Note 18

Breaks were often interprofessional affairs; conversation would often turn to work related topics and IPL could occur. A doctor explained:

“...being around other medics and health people you just come back to work. You can’t help it and it can be hard to talk about anything else, so sometimes you are sitting having lunch and you’re just chatting about it and someone will have had a similar experience and they tell you what they did and you just learn from that as well and that’s quite good.”

Interview 20 Doctor

Staff could share opinions, vent frustrations and could update each other on patient progress. Patient care plans could be developed, and knowledge could be shared. The following field notes show the staff members that could be present and illustrate the topics discussed during staff breaks:

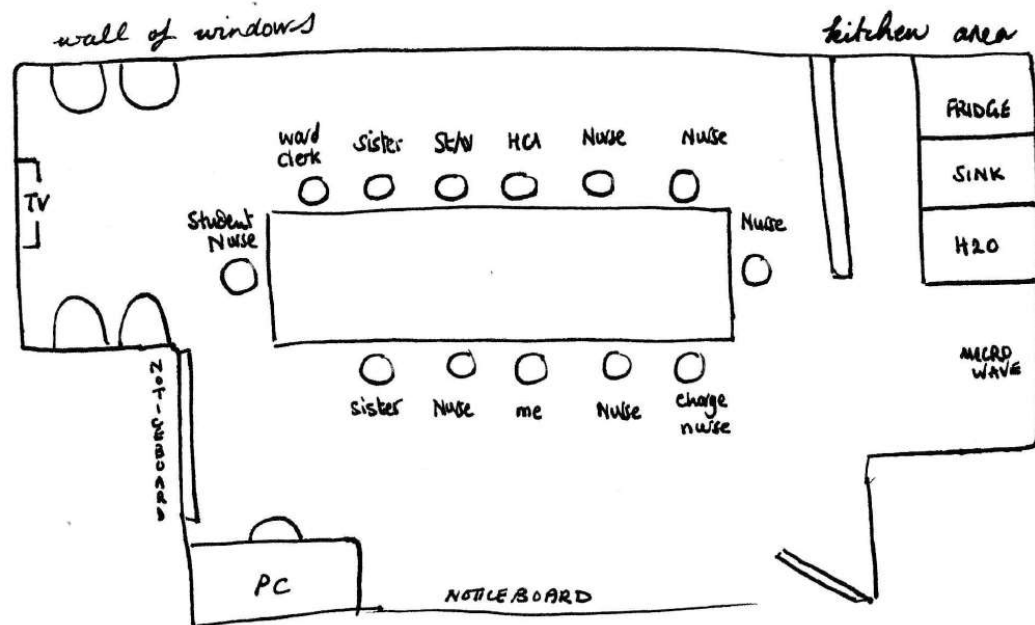
“Mix of roles & grades: ACCP, Nurses Grades 5-7, HCA, Student Nurse. 2/3 conversation about clinical work-related topics (50% factual updates, 50% non-factual work-related topics). 1/3 conversation was personal: e.g., work party and celebrities.”

Field Note 3

“There were several different professionals all sat around the dining table: both consultants, registrar, student nurse, HCA, sister, ward manager. An interprofessional conversation about nurse education came about.”

Field Note 14

Break rooms could be associated with IPL, but this was informal and spontaneous in nature. The field note image below shows the layout of one break room, which promoted group discussions around the large inclusive seating area:



Field Note 3: The break room and inclusive conversations

Breaks were also social, with no work talk and no apparent IPL opportunities, or they could be uniprofessional and quiet, where staff were observed sitting in silence, looking at phones, the TV on in the background. The atmosphere of the break room fluctuated; ranging from a relaxing jovial climate, to quiet and disengaged.

IPL could potentially arise in any area where interprofessional interactions were possible. Each research site demonstrated territorial behaviour when staff adapted an area not intended for learning, modifying the space to repurpose it for learning. Examples of this were noted across the research sites, and the treatment room, corridor and unused bed spaces were used for learning.

I observed the treatment room, designed to store and prepare medication, being utilised for handovers, preparing training packs, for short periods of staff respite, for equipment training and as a social space for discussions and learning. One nurse described it as ‘multi-functional’ and explained it was used primarily “for the space” (Interview 10). Another unit modified a closed bed space for insitu simulation; offering the chance to learn interprofessionally about clinical practice, and the location in the unit promoted interprofessional attendance. A physiotherapist noted he had not participated with insitu simulation, claiming it tended to be nurses with doctors; but he recognised the potential for IPL, acknowledging he was sure he could participate if he wanted (Interview 22). An HCA viewed regular simulation sessions as potential IPL opportunities, and despite limited engagement himself, he explained many professionals were involved, simulation facilitators were relaxed helping nervous staff and it was important to maintain accuracy and authenticity of learning (Interview 18). A consultant believed the benefit of IPL simulation was to invite interested staff across professions, to “start simple and build up” their knowledge and skills (Interview 21). Another consultant articulated the IPL potential for increased interprofessional simulation (Interview 1). Staff believed simulation-based training imitated critical care practice, accelerating development of staff skills and it was safe:

“I think simulation is a bridge, between the clinical environment and more didactic teaching ...I think it provides a safe environment for teaching. It allows you to explore situations that you might easily come across in the clinical setting, but you might not feel quite prepared for. Equally, that can still be as stressful ...But I think, because it is a safe environment and the things that you’re doing, you’re able to learn from and not have any direct adverse effect, I think that’s potentially a good thing.”

Interview 4 Nurse

Overall, simulation was viewed as a positive opportunity to engage in IPL. However, staff could be excluded in favour of developing specific professional skill sets:

“(HCAs have not done simulation yet) ...because there’s been a lot of nurses starting. Either progressing in their role or new starters, so they’ve been trying to get them trained into the position first. ...because they’ll have six weeks where they get their competencies done.”

Interview 18 HCA

Perhaps the most creative use of space observed was modifying a wide adjoining corridor into a designated space for meetings (Field Note 3). As a heavily utilised area, participants appreciated the space the corridor offered to do their ‘job’ and described it as the place “where people have their interactions and discussions away from patients” (Interview 3). Complete confidentiality was unattainable; patients were occasionally mobilised through the area, staff regularly passed through, but a door offered some seclusion to increase privacy. A nurse emphasised that relatives were never there and nothing personal would be discussed in that area (Interview 7). The corridor was acknowledged as a designated space for interprofessional interactions.

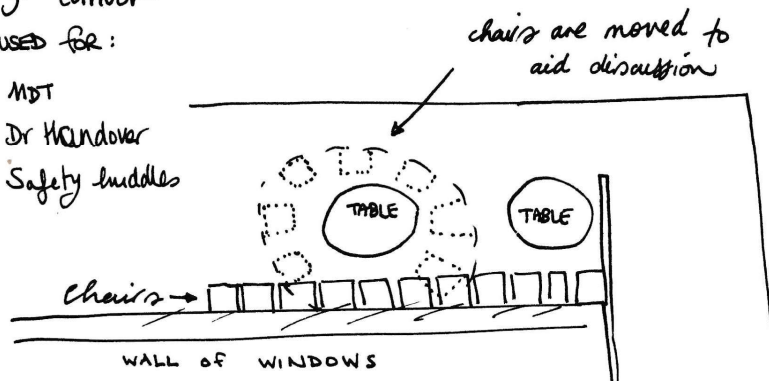
The versatility of the corridor enabled communication of key messages during shift handovers and safety huddles. It had resources, such as books, literature, and Power Point, which could be displayed on a large mobile screen, promoting formal learning and development. Tables and chairs were moveable, and meetings occurred in circles around tables with drinks in the centre. This made interactions inclusive and welcoming and offered staff respite; visiting professions would actively seek out critical care staff mid-morning on the corridor, joining them to discuss and plan patient care. This corridor enabled interprofessional interactions and facilitated IPL.

my position: usually sit at the end/periphery
 of a group but ended up sitting in the
 middle and sharing some jokes; where appropriate!
 Gatherings often become large and circular.
 Spaces are changed to aid collaboration

e.g. corridor

used for:

- MDT
- Dr Handover
- Safety huddles



Field Note 3: Adaptive spaces to promote interaction

Having a dedicated space for interprofessional interaction in the corridor prevented the norm of medical staff leaving the immediate clinical area once patient reviews and handovers were completed. The adaptability of the corridor increased the doctors' presence on the unit, made them easy to find and increased their visibility and proximity to others. Staff valued this:

"It's not cut off from the unit, you can get to things quickly, so I don't think the nurses feel like all the doctors run away, because we're on the unit still ...quite often some of the consultants will come from their anaesthetic list and sit down and have a coffee. Some of the parent teams will come and sit down and have a coffee. Yeah, I think it is important. ...because you get an overview of what the consultant is thinking about each patient, you get to learn their styles and how they're thinking."

Interview 3 Doctor

The corridor increased interprofessional interactions creating a rich IPL culture, where regular meetings had become ‘habit’, formed over time, and embedded into daily critical care practices (Interview 5).

6.4 *Ways of Learning*

Critical care staff adopted different ‘ways of learning’ together. This theme presents the variety of learning approaches that embedded IPL into daily critical care culture. Professions learnt informally and formally by asking questions, gaining rationales to understand instructions, through experience ‘by doing’ and from training and integrating underpinning theory. The depth of knowledge exchange varied and was affected by assumptions of knowledge levels between peers.

6.4.1 *Learning from Others*

Learning from others advanced staff knowledge and understanding of different professional roles in critical care. Staff learnt from others how to behave and present themselves in the pursuit of doing their job well. A physiotherapist explained:

“...you’re wanting to learn the various aspects of everyone’s profession and how they can link together in terms of management of a patient and also, learning about role recognition.”

Interview 2 Physiotherapist

Supernumerary working promoted learning from others, protecting time to develop new knowledge and skills. Barriers to IPL occurred when adhoc training and dissemination of knowledge were prevented. Practitioner experience was linked to knowledge development, and learning was possible when experts could cascade information down to others (Interview 19). An ACCP explained that when

practitioners' knowledge advanced, teaching others became possible; improving the bonds between people and making it "easier to go through things" (Interview 5).

Staff performed tasks differently, often with different perspectives to share, which broadened learning experiences. A consultant stated all professions need support and "want to learn more from each other to become better professionals" (Interview 1). A physiotherapist elaborated on the richness of IPL:

"When you've got the vastness of the knowledge that exists in critical care and utilising the senior nursing staff that have been there for twenty odd years, who have seen massive changes in ITU and are very up-to-date with every new thing that's coming in, it would be a very lonely environment [without collaborative IPL] and I think that part of the richness of the learning within ITU, is that you're all in it together ...clinical skills is just one small aspect of working within healthcare and you need to learn compassion, you need to learn communication, you need to learn all those things that make us advocates for patients and working within their best interest ...all of that comes from working with other professions and working with colleagues. You can learn from a book, your clinical knowledge, but it's how you can utilise that clinical knowledge within that integrated care setting and I think a lot of that comes from development of your role as a leader, as a manager, as a team member and just as a nice person who leads."

Interview 2 Physiotherapist

Knowledge was drawn through the hierarchical professional structure and a cascaded learning support structure existed. This relationship became initially apparent whilst observing the learning activities of an ACCP. Intraprofessional learning had a hierarchical form and field notes captured the consultant supporting the ACCP with learning, the ACCP collaboratively consolidating their knowledge with a registrar (Reg), and then sharing their knowledge with a medical student. Cascaded learning was additionally observed with nurses, often when staff could not attend training. A nurse viewed cascaded learning disapprovingly as compensation for staff absence to

training and described staff reliance on a ‘drip feed approach’ to information as inefficient, didactic, and instructional (Field Note 12).

Senior practitioners provided reassurance and were a source for learning; when supportive, a cascaded system for learning existed based upon role modelling and skill acquisition. However, cascaded learning created risks for learners, and the trustworthiness of this approach improved if information was given by senior staff. This was emphasised during an interview:

“I’d rather have (cascaded training) from a band seven (rather than a band 5). Because I’m putting my pin at risk.”
Interview 19 Nurse

The hierarchy and seniority of professions influenced asking questions; some staff would seek out experienced team members to answer their questions in depth. One doctor described the expectation that senior staff members had more knowledge and should be approached with problems and questions which they should have solutions for (Interview 3). This accounted for knowledge seeking behaviours of nurses who sought out colleagues that worked as long as, or longer than they had, where junior doctors asked consultants, and consultants sought specialist opinions. The advantages of approaching senior staff were summarised by a nurse, who explained senior staff knew how to “get the job done” (Interview 19).

Hierarchy could be intimidating; for one doctor, some consultants filled him with ‘dread’ (Interview 20). The apprehension that arose asking consultants’ questions resulted in less experienced doctors seeking answers from “easy to approach” staff, such as nurses or junior doctors. In these instances, risks of feeling stupid were

lessened; questions were more easily understood and recent knowledge was easier to share. Staff with extended roles, such as CCOT and ACCPs, were also identified as additional experienced staff who could be asked questions. For HCAs, if questions did occur with doctors, they were usually superficial and related to equipment.

New knowledge was gained as staff learnt from each other, and further dissemination of this knowledge enhanced the knowledge base and skills of the team. One consultant recalled numerous examples where he had learnt from others (Interview 17). Examples included an F2 (Foundation Year 2) doctor with ENT (Ear, Nose and Throat) experience sharing knowledge the consultant had forgotten, medical students initiating sleep promotion changes to improve the unit practices, and nurse specialists who provided additional insight to patient conditions that the consultant did not know.

For staff extending their knowledge and furthering expertise, problem solving was a guided approach to learning that fostered critical thinking. For example, consultants were observed presenting clinical challenges to junior doctors, rather than providing them with answers, instructions, or rationales. One doctor appreciated this approach:

“I’m beyond the limit of being told what to do and I’m going to have to start very soon telling people what to do soon. So (the consultants) they’re training me.”

Interview 3 Doctor

Being trained as independent thinkers was an important part of learning, and staff needed to learn from others how to lead and run the unit. IPL was needed to learn about the daily functioning of the critical care unit, as well as caring for the critically ill adult. The complexity of learning pragmatically from others was captured by a nurse:

“(staff) need to know how to look after the critically ill patient, but you need to know how to prioritise on a wider scale, and see not just what’s going on with your patient, but what’s going on with the department as a whole.”

Interview 10 Nurse

Informal IPL was favoured over formal, and psychological safety was important to enable staff to overcome fear associated with revealing their knowledge gaps:

“(There is) less preparation informally, which is good. It’s more fun, because people are more relaxed, so they learn more. But with formal, you have to get over that initial barrier of people being nervous amongst each other, they’re scared to show a gap in their knowledge and quite often there is a doctor who you are competitive with or as a nurse you don’t want to feel like an idiot next to a doctor.”

Interview 3 Doctor

An unexpected relationship was identified between the amount of information given and perceived levels of knowledge. The greater the knowledge differential between staff, the less information was exchanged. Information was modified and abridged versions were shared when knowledge levels were low. In these circumstances where, for example, senior staff members were giving rationales to newly qualified staff, only basic information was shared, despite the vast potential for knowledge exchange. The depth of knowledge sharing was a controlled and regulated process.

Sharing knowledge with HCAs was described as “need to know” information (Interview 8). Information was withheld if it was considered outside their role; with limited academic training and qualifications, HCAs presented the greatest knowledge gap between professions. HCAs had the greatest IPL potential, but the knowledge gap and professional boundaries resulted in missed IPL opportunities for HCAs. IPL was beneficial to the growth of the teams’ knowledge; as an HCA explained, having

additional skills and knowledge in the team could “complete the circle of work” when skill gaps within the team were closed (Interview 9).

A doctor provided an interesting perspective regarding the depth of knowledge exchanged, focusing on the transformative effects of IPL. The novice practitioner was believed to gain a lot more than the expert. The transition to a higher level of expertise following IPL was believed to be transformative and was comparable to the effect of an expert teaching a novice practitioner:

“If you went from, say on a scale of 1 to 10, if you improve from 0 to 1 that’s much more than a 9 to a 10. ...I would say the less you know, the more you can confer. But then again, if someone understands everything and they are missing this one thing and it’s holding them back, and you figure that out and fix it, then that could be massive for them.”

Interview 3 Doctor

One physiotherapist believed that awareness of learning was poor, and staff often engaged in subconscious or ‘unconscious’ learning; where the depth of knowledge was unrecognised until it was drawn upon in future practice:

“I think it (being unaware of learning) happens more than any of us care to admit. ...So it’s not that you haven’t learnt, it’s just that you haven’t consciously sat down and thought about what you’ve learnt.”

Interview 16 Physiotherapist

Participants conveyed that the more people knew, the safer the patient was; however, in-depth exchanges were rare. The depth of information sought was reflective of practitioner experience; new staff were potentially overwhelmed requiring minimal information, and more experienced staff extended their knowledge to understand reasons behind actions. For inexperienced professionals learning from

interprofessional dialogues, it was not always apparent if information was withheld but further enquiries could be made to seek additional knowledge (Interview 9).

Staff often learned by watching and staff positioned themselves to watch each other and learn from observation. Field notes captured many instances of this, and learning by watching could be formally planned, with staff allocations for example, or could be informal and opportunistic, occurring during emergencies such as cardiac arrests. A consultant emphasised the challenge resided in harnessing the learning from such situations and disseminating outwards through the team (Interview 17). Doctors could be grouped and taken to one side to teach, but this was not possible with nurses, who learnt reflectively in the patient bed space. A doctor described the difficulties of teaching others after an event if they had not observed the situation; it was a 'struggle' to teach them (Interview 3). Learning attained by doing could be difficult to disseminate to others retrospectively.

A physiotherapy manager developed an IPL approach using students to educate the wider team; she explained that, rather than offend nurses by assuming they lacked knowledge, she taught students in front of them (Interview 14). IPL by peripheral participation was utilised to share physiotherapy knowledge, in a non-threatening, non-judgemental manner, through the students. Similarly, consultants that frequently taught and tested junior doctors on ward rounds, also indirectly educated the team through the students. Learning through others in critical care was a fundamental means of engaging in IPL and developed and consolidated knowledge and skills. Staff additionally learnt by asking questions, following instructions and learning from rationales, through reflection and by underpinning learning with theory.

Asking questions was the most common means of learning from others. The ability to ask interprofessional questions was highly contextual and participants linked this to factors such as hierarchy, profession roles, rapport, and safety in the environment. It was universally agreed that when staff asked each other questions, they learnt together, and this improved patient care and safety. Doctors were also preoccupied with ensuring patient safety, by leading patient care and learning how to ask questions:

“...next year this is going to be for the safety of patients. I need to know what is going on in the unit ... I came to the realisation that, unless you ask the stupid questions, you’re never going to know the answers.”

Interview 20 Doctor

The contextual nature of asking questions was summarised by a consultant who explained that the ease of asking questions was dependent upon how many people were on the unit, the consultants that were on and the nursing staff, in addition to how busy it was and how complex the patients were (Interview 21). Therefore, whilst common, asking questions was complex.

Staff were often selective in who they approached with questions. One physiotherapist claimed they would ask anyone, but the person chosen would reflect the question being asked; the question was pitched based upon perceived time, inclination to answer, and the depth of explanations required (Interview 13). A doctor had noticed:

“...the particular person who is constantly with the patient, is the best person to get information from.”

Interview 14 Doctor

This refers to the nurses’ constant presence with patients, and a physiotherapist agreed, explaining he would be unlikely to ask doctors questions because they were less

present and communicated less with the physiotherapists; this prevented questions that could lead to IPL (Interview 15). Consistently, physiotherapists explained a lot of the time they were not introduced to doctors in the team. This meant they were not in a position to ask them questions and this created a barrier to IPL.

‘Safety’ was a term used by participants, to explain how they needed to feel to learn by asking questions. Feeling safe to ask interprofessional questions meant that the fear of asking ‘stupid’ or ‘daft’ questions was minimised or became insignificant. An ACCP explained if someone made her “feel stupid”, she would not ask them questions (Interview 5). A nurse agreed the safety to ask questions influenced interactions that could lead to IPL:

“I think it makes a big difference if you’re comfortable with the person that you’re discussing things with, because you need to not a) to be made to feel stupid and b) to feel like you can ask any question. You know, no question is a stupid question, because if it’s worth asking, then it’s worth a decent answer.”

Interview 4 Nurse

When staff were new or lacked confidence, they needed to feel psychologically safe:

“...you have to be safe and comfortable to ask the questions that you want to ask. ...because you are involved in different areas, with people who’ve got different levels of knowledge and experience”

Interview 6 Physiotherapist

Feelings of safety were linked to rapport as a nurse explained, it is human nature to ask questions with people you have a good relationship with (Interview 5). Rapport and safety were linked to professional roles; for example, physiotherapists, doctors, and HCAs cited the nurses’ continual presence caring for the critically ill patient as

the reason nurses would often be approached first with questions. Whether someone was viewed as a 'teacher' within the team, also influenced asking questions:

"...they [nurses] know that I kind of teach a bit now, so they just ask. I like to have the relationship with them where they can ask daft questions as well... I would say to them "there's no such thing as daft questions, you might ask something and it might just reveal a whole load of understanding and it will just click"."

Interview 3 Doctor

Asking questions in the interprofessional team was additionally linked to emotions, being human and being part of a wider team. During an interview with an HCA, he explained how easy it was to ask questions when the team understood where people were coming from and when there was sufficient support to ask any 'stupid questions' (Interview 8).

Asking interprofessional questions was linked to trust. A nurse explored this relationship to IPL, and explained how the person asking the question would protect their self-esteem before approaching someone and engaging in IPL:

"You're expected to hit the ground running, because it is such a fast-paced environment. If you feel that you can't approach somebody because they've got this barrier up, then you don't feel safe to open up and to protect your self-esteem and your integrity, because you don't want that person to perceive you as being stupid, or you don't know what you're doing. You want to gain that trust from that person that you are safe to look after that patient."

Interview 4 Nurse

Not all staff were selective when choosing whom to ask questions to aid their learning. Professions from all groups emphasised they could ask anyone in critical care a question, because it was widely believed that someone in the environment would have the answer to any question posed. With so many knowledgeable staff, there were many

chances for IPL using questions, and interprofessional working increased the potential for IPL, as this physiotherapist indicated:

“It’s really important that junior nurses feel happy to ask them [consultants] a question, and I do think there is a lot of potential to tap into those professional bodies of knowledge. That’s what makes your different professions; that you’ve got clinical skills and clinical focuses on different things, but in critical care, because a lot of the time there is maybe three of you working with one patient, you have the potential to tap into all of those.”

Interview 2 Physiotherapist

Learning to work with others was fundamental to asking questions and was considered part of all health professional roles. Whilst fear of asking ‘stupid questions’ could be overcome by focusing on patient safety, perceptions of critical care as ‘friendly’ and ‘receptive’ influenced how questions were asked. On first arriving at critical care, one nurse recalled how supportive and helpful staff were (Interview 5). Friendly and solution focused staff meant questions were easier to ask and resolved concerns:

“I would rather ask a question, and have whatever settled, than be worried about it or concerned about it. “

Interview 16 Physiotherapist

Stages of IPL were indicated by participants when questions were central to the learning approach. Participants explained the first stage of IPL was conducting independent learning into a subject; to prevent asking stupid questions, to showcase existing knowledge and to underpin the IPL that followed. The second stage was asking interprofessional questions. With fundamental knowledge gained in advance, participants felt more prepared and secure to approach other professions with questions. The third stage of IPL included observations of practice; staff would often ask to observe practice to enhance understanding, asking questions during procedures. To consolidate and extend IPL, the last stage of learning included the dissemination of

newly acquired knowledge. A nurse captured the multifaceted process of interprofessional questioning:

“I’ll look things up myself; I’ll do some background reading as well... I personally believe that the more people that have got the knowledge, I believe in sharing it out and ...the safer it is, because then you’re not reliant on yourself to remember everything; you know that you’re passing the information on and other people know things as well.”

Interview 10 Nurse

The open and inquisitive nature of critical care presented opportunities for interprofessional questions and, when knowledge was widely shared this was seen to embed IPL into critical care culture. Interprofessional questions extended beyond IPL, and questions needed to be asked to challenge clinical decisions and to promote safe practice. One consultant emphasised that interprofessional check points were needed between the points of their clinical decision-making to the implementation of their plan, to ensure there was sufficient opportunity to detect and rectify any potential errors before it reached the patient:

“If nursing staff or junior doctors only ever work on instructions then they will not be able to question these instructions. So, if whatever I instruct is stupid for whatever reason, because I’m on the wrong track or I’m delirious myself or asleep when I say it or distracted and talk about a different patient, whatever, error might happen and if they don’t question my instructions because they don’t know or have the competency, that [‘stupid instruction’] will immediately filter through and an error will happen.”

Interview 17 Doctor

Many instances of interprofessional instructions were observed during fieldwork. This concise communication provided information for professionals seeking knowledge. However, in the absence of a rationale, instructions were superficial, and it was uncertain whether staff could learn interprofessionally from instructions alone.

Instructions could be transferred to other situations, but they offered limited IPL opportunities. One doctor explained that instructions were helpful to guide practice, but experience was paramount because learning from instructions was limited when it could not be applied to all patients and all situations (Interview 13).

Instructions were beneficial during “emergencies and task driven circumstances” and debrief could occur afterwards to promote IPL (Interview 4). Culturally, doctors were readily identified as a profession that operated from an ‘instruction only’ stance, and rationale could be withheld by this professional group. When asked about rationales to support instructions, an HCA described being given small amounts of feedback from doctors when learning how to carry out procedures (Interview 11), and one consultant assumed that nurses did not “want a tutorial” from them at the end of a ward round (Interview 1). Critical care practice needs an evidence base; therefore, instructions alone were often insufficient, so staff sought out the underpinning rationale to guide and develop their practice. Instructions would often answer the first part of another’s question; thereafter, a rationale could follow:

“So in those first instances, they want to know physically what to do. So you answer that bit first, and then you give the reason why you would do it. ...you still need that explanation at the end. Some people would be happy to not ask why. But I wouldn’t. I think it’s going the other way now; it’s not often you’d find someone that would be just like “Oh, okay then, I’ll just accept that”.”

Interview 5 Nurse

Rationales supported instructions and participants indicated the multifaceted nature of this practice. The decision to provide a rationale could be heavily presumptuous and levels of knowledge were assumed by the professional providing instructions. If it was assumed the professional already knew the information, then reasons behind an

instruction were withheld. A doctor explained this using ventilator setting changes as an example; the nurses would inform the doctor of the changes, but they would not give a justification to support this decision, on the presumption that the doctor would already know (Interview 10). The provision of too much information was another concern, expressed often by doctors, in addition to the perceived interest of the person involved in the dialogue:

“Sometimes a rationale might be too much information and what people want is the bottom line. Sometimes if they’re busy and they maybe don’t see that it is necessarily their requirement for them to know in that much detail. I don’t know, whether there is an area that is not particularly of interest to them, so sometimes you can overdo it [by providing a rationale to underpin instructions].”

Interview 1 Doctor

Providing a rationale was time consuming and related to staff workload; if time was available, only then could staff go into depth regarding their instructions. Face-to-face contact was necessary for this to occur, and staff deliberated what would happen if there was no-one to provide a rationale. Providing rationales with instructions was perceived as beneficial for numerous reasons. They informed decisions and clinical reasoning processes, facilitated interprofessional decision-making, and were linked to increased IPL and competence, as knowledge and skills developed through enhanced understanding of practice. A physiotherapist explained that rationales strengthen and reinforce learning (Interview 14). Doctors proposed that by understanding instructions, staff develop competence and provide better patient care (Interview 17) and rationales provide shared goals for professions to work collectively towards (Interview 13). Professionals needed to justify decisions and instructions with clinical reasoning skills to collaboratively meet patient needs:

“It’s very easy to make a suggestion, but it’s important as clinicians that suggestion is weighted on clinical justification. A lot of the time within ITU, we might have different ideas to one of the doctors or nurses, and that discussion can only happen if each person justifies their thinking and their clinical reasoning behind it. ...without that justification, it’s just two opposing ideas and I think it’s really important that we can justify that and also listen to other people’s justifications because a lot of the time it’s meeting in the middle between the two and unless you understand someone’s clinical reasoning for what they want to do and they understand yours, you can’t do that.”

Interview 2 Physiotherapist

Patient safety improved when a rationale explained interprofessional instructions. The greater level of deliberation and critical thinking that arose from using rationales with instructions, was supported by the construct that the informed interprofessional team was safer and better skilled to make decisions and give better patient care.

Giving a rationale to underpin instructions shared the workload across teams, and staff were deemed more likely to carry out instructions if they understood them:

“I know people are far better at complying with my instructions if they understand why they are asked to do something and agree with the rationale behind it.”

Interview 17 Doctor

Those giving instructions could find rationale provision an arduous or uncomfortable task, although, the process of interprofessional information sharing of this nature was considered natural to some. Staff would do this from an educational perspective, to reinforce learning and skill development. Rationale provision could also be a narrative of the person’s thoughts or, conversely, some staff needed to be directly asked to explain their rationale behind an instruction. Regardless of the intention and

experience of providing rationales to support instructions, benefits were associated with insight into the interprofessional decision-making process.

IPL opportunities were missed when instructions lacked an evidence base to support them. Rationale provision offered a means of gathering evidence to support clinical practice interventions and, when provided, could enhance understanding, and enrich practitioner skills. Learning from others, through asking questions, observation and seeking rationales to underpin instructions was possible with IPL and learning by doing was another means of engaging in IPL.

6.4.2 *Learning by Doing*

A favoured approach to IPL was ‘learning by doing’; this made learning experiences authentic and relevant to critical care practice. Participants explained that IPL by doing, moved people away from didactic and highly theoretical learning, towards a more complex authentic learning experience. This active approach to learning was described as ‘hands on’ and involved learning that arose from clinical experiences. IPL by doing included partaking in clinical procedures, assisting with emergencies and through participation in activities.

Learning by doing added to a person’s existing knowledge and consolidated theoretical understanding. A nurse explained that with IPL, staff learn once they start working in the field (Interview 12). Learning by doing extended the often simplistic information learnt from a text book, and the approach made IPL more realistic. Learning by doing was described by an HCA as:

“On the job training ...That’s the only way to do it. You can’t just bring a text book out and say “this is what will happen”. Everything is different ...basically you just learn from each experience that happens here.”

Interview 9 HCA

Therefore, learning by doing captured the complex reality of critical care practice that a theoretical resource could not replicate. The gain in knowledge was attributed to IPL arising from participation in activities, and this type of learning was highly valued because it closely reflected critical care practice:

“[professionals might come together and learn in the setting] during procedures, so nurses, medics, if you’re putting lines in or for example you’re putting in a trachy (tracheostomy), that’s a good time to explain what you’re doing and not just the process of setting up for the procedure while we’re doing it.”

Interview 21 Doctor

Learning by doing created evidence of effectiveness. In the absence of a sound body of evidence, staff were drawn to opportunities to prove that aspects of practice were effective. IPL on the job, learning by experience, through participation and through trial and error, all built up an evidence base of best practice that the team could use to underpin their practice. A physiotherapist emphasised their rehabilitation training aimed to enable staff to learn “by doing it and proving that it works” (Interview 14). Rehabilitation in critical care is a clinical intervention that is currently a national driver, but it has limited supporting evidence, therefore staff needed to learn together to create a body of evidence so that IPL could be transferred into daily practices.

Many participants described the benefit of having a narrative to guide and support them during learning experiences. When staff were supervised and coached by other professions during activities, learning transformed from being uniprofessional, to rich

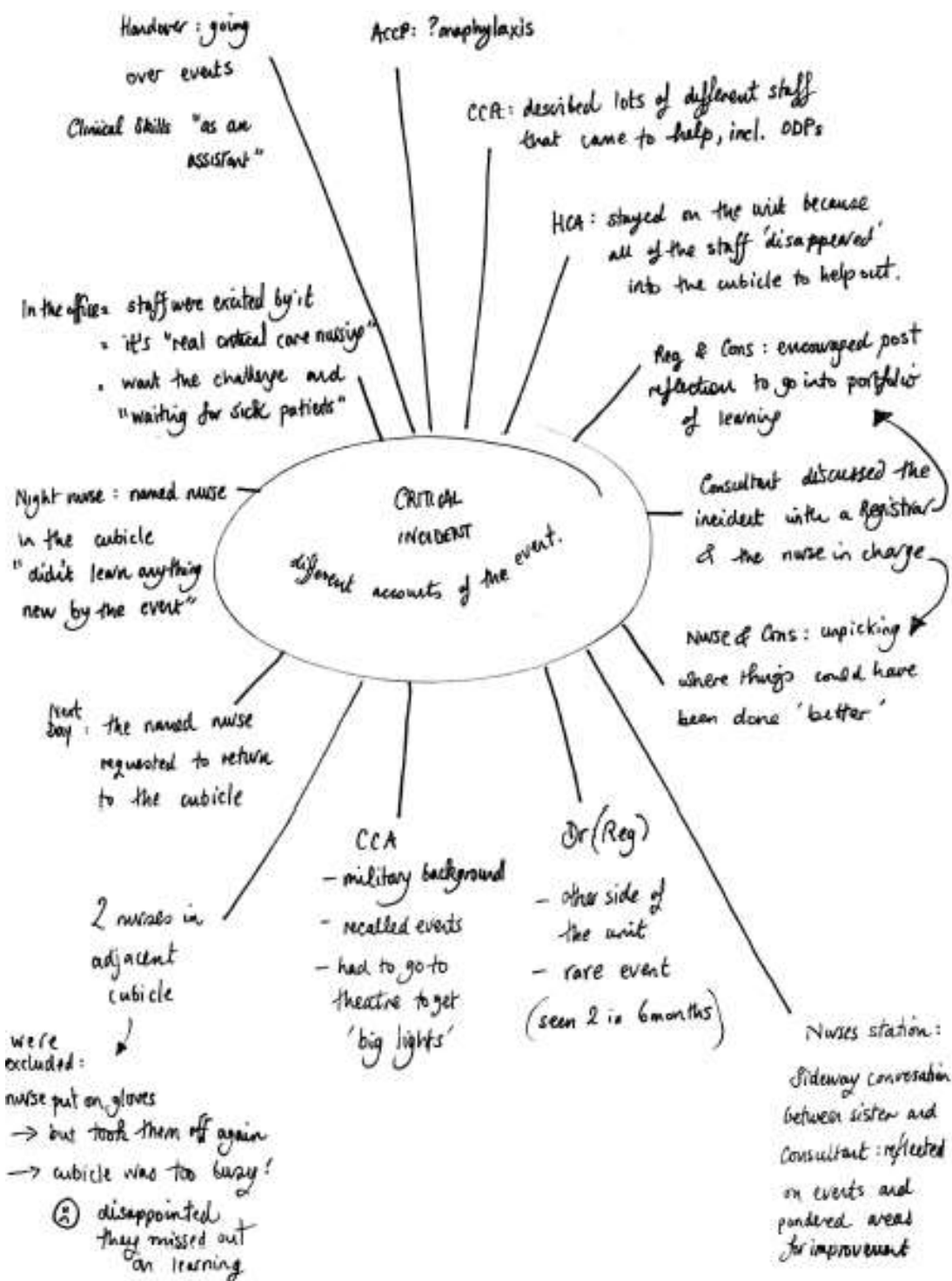
and interprofessional. Participants shared examples of how being able to follow and retain the ‘sequence of events’ helped to understand the actions taken but acknowledged an absence of interprofessional guidance and teaching was detrimental to skill development. One HCA described the ideal learning situation for acquiring a new skill as “copying or doing it, somebody explaining it while I’m doing it” (Interview 8). A physiotherapist recalled a negative experience, where an absence of guidance prevented IPL (Interview 14). The physiotherapist was asked by a nurse to “take a cuff pressure” that she was not trained for and was then criticised for the lack of skill; no guidance or teaching occurred to build competence through IPL. These participant experiences demonstrate that enhanced IPL is possible through engagement in active processes of learning by doing, and that the provision of a supportive narrative is beneficial to the depth of IPL. Being supported by other staff enriched knowledge and triangulated the IPL interaction; current knowledge was consolidated; the realities of complex practice were integrated into performing the skill and supporting professions could add their experiences to the learning situation.

Whilst discussing ways of learning in critical care and learning by doing, participants once more, placed the safety of patients ahead of IPL priorities. Patient safety and service provision remained of primary importance to staff and IPL activities were always secondary to this. This shared interprofessional philosophy of care relates to the theme *Community of Practice* (in 7.5 *Community of Practice*), particularly regarding commonality (section 7.5.2 *Commonality*). Learning by doing offered a collaborative way of learning that promoted IPL. The depth of learning was enhanced when professions guided each other through tasks, and IPL was embedded into critical care culture when knowledge was further disseminated throughout the wider team.

6.4.3 Learning from Reflection

All staff face challenges with their practice, and reflection could facilitate learning from experience. With an open, candid environment, where staff were encouraged to report problems, IPL became possible. This level of open communication varied dependent upon the practitioner; not all team members were described as ‘frequently communicative’ and their level of courage was influential on their forthrightness to share mistakes, an action that was considered ‘brave’ by colleagues (Interview 13).

Adverse events extensively influenced IPL and was discussed with a consultant (Interview 1). During a fieldwork observation, one specific adverse event was recalled, on numerous occasions, and by different interprofessional staff. Neither I, nor the consultant interviewed, had been present on shift during this particular incident when a patient had ‘lost their airway’ on multiple occasions. Yet, we both knew about it. The IPL that originated from this one adverse event resonated through the team discussions for several days, as the conceptual map from Field Note 4 illustrates. The severity and unexpectedness of the event permeated through the team and was discussed for several days. Different staff members learnt from this one isolated event.



Field Note 4: Conceptual map of IPL arising from an adverse event

In the fieldwork observation that followed the incident, a lot of spontaneous and informal interprofessional discussions between 'tasks' were observed. Rich IPL was interwoven into daily activities, as staff openly and privately reflected on the challenging events that had occurred. The consultant interviewed recalled a fellow

colleague privately ‘offloading’ about the situation the following day and he pondered the reasoning behind this reflective learning:

“After a stressful event people want to talk about what happened. It helps for all manner of reasons, not just from a learning point of view, but my colleague wanted to talk to me about it because it had been such a difficult thing because he had doubts about the way ultimately it went. Fine for the patient, but he had been mulling it over, reflecting on it. Wondering at which point, there were several, multiple ways it could have been done differently, and he was obviously thinking through, in his own mind, and when that happened he was wondering whether things would have been done different.”

Interview 1 Doctor

Interprofessional reflection, and debrief, presented an opportunity to offer reassurance to staff. For example, an ACCP explained they would offer ‘mini-debriefs’ to colleagues to support them after clinical events (Interview 5). Therefore, learning from reflection could reassure staff that an appropriate course of action had been taken in complex situations. A doctor highlighted the importance of proactively seeking out people that would benefit from debrief, to reassure them they had acted appropriately:

“I like to pick up people who often look really stressed and worried. Often the student nurses or the new nurses, or the nurse looking after the patient that feels like we’ve done something wrong, because then you need the debrief at the end. ...it happens really poorly, especially for young doctors. It hardly ever happens. ...I always try and do debriefing if I can.”

Interview 3 Doctor

Other participants valued talking to facilitate reflection that could lead to IPL. One HCA had noticed that nurses in critical care were often “so engrossed” in their work, there was no time to look at events “happening around them” (Interview 8). The nurses’ heavy workload was therefore seen to delay the reflective process, and the time to think about situations, as they were occurring, was often limited. For IPL to

materialise from reflective conversations, the HCA thought there needed to be opportunity to talk.

The timing of interprofessional reflection was alluded to during consideration of the emergency situation. Staff were deemed unable to ask questions and to learn ‘in the moment’ because the time was not available to pause and to reflect; the priority was the deteriorating patient. In these situations, the moments to reflect were perceived to ‘slip’ if they were not embraced promptly. In the haste of the moment, reflection was not possible and several days could pass before the process of internal reflection would begin. Furthermore, additional workload tasks and rotational shift patterns made it challenging for interprofessional reflection to occur after an event.

Shared reflection in the moment had value for IPL, as staff recollected the sequence of events that had unfolded. A physiotherapist believed this was of significance particularly when incidents had been ‘really misjudged’ or unexpected, and she described how the interprofessional team would:

“...get back together and stand back. ...unpick the situation, from start to finish, to see if there was anything else that [they’d] missed [or whether there] was anything else [they] could have done.”

Interview 16 Physiotherapist

A physiotherapist noted that rich IPL from group reflections provided opportunity to reframe any negative emotions that arose, such as guilt, to reassure themselves that they had not made any mistakes (Interview 15). One doctor however, perceived feeling guilty as beneficial, claiming that nurses used guilt to improve their skills (Interview 3). He explained this with an example of reflection with a nurse after a patient’s “tube

nearly came out” during a sedation wean. The doctor claimed the nurse still felt guilty after the adverse event, despite following medical instructions and appropriately raising the alarm for help. The doctor mused that feeling guilt could be “a sign of being a good nurse, because you constantly improve that way”.

Participants claimed they engaged poorly with formal reflection; writing down internal reflections was described as challenging and difficult. One nurse “absolutely hated” reflection; explaining this had been a particularly difficult task for revalidation with the nursing professional body (Interview 10). Formal reflection of this nature meant she relived the experience and perceived this reinforcement of learning as unnecessary:

“If I’ve had a bad experience, I’ve learned from it and I never do it again or I make sure that I’ve got the skills. So I don’t need to write it down and reflect about it. I’ve had a big enough fright at the time and I know what I need to do to make sure that that doesn’t happen again. And if I’ve had a good experience, well that just reinforces it anyway. So I don’t need to, I don’t feel I need to. So I’ve had a lot of learning experiences. Well, if they’re good enough or bad enough, you don’t ever forget about them I think. You learn from them.”

Interview 10 Nurse

A physiotherapist admitted that they were “not great at doing reflections” either and felt guilty that this was something they should do more often, given that “the nature of the job” was to learn, “day in and day out” (Interview 16). Conversely, a doctor felt that through formal reflection, returning to the learning experiences days later was ‘useful’ (Interview 20). The process enabled him to objectively reflect on his role in the situation, and to be reassured that his performance had been sufficient. A senior doctor explained that incident forms were used to capture events reflectively, but, after submitting the report, the individual had to inform other people (Interview 13). He said

this could encourage them, and others, to ask for help at the right time in the future. So, whilst not all of the critical care team appreciated formal reflection or believed it was widely practised, in terms of practitioners' learning development, the potential for IPL from reflection was acknowledged.

Most professional forums were labelled as interprofessional, in reality, they were intraprofessional. The meetings that did occur, where case studies were reviewed or where debrief and reflection took place, were often inclusive by name but exclusive by nature. Opportunities for formal interprofessional reflections in critical care were sparse. It was apparent all forums had interprofessional potential; any profession was welcome to participate. However, professions struggled to attend meetings, affected by the venue or conflicting work demands. Case study reviews and formal education often occurred outside the unit, making it difficult for interprofessional attendance, and it depended 'how busy' other staff were at the time. A culture of reactivity was implied, as forums for discussion often occurred in response to specific complaints or challenges, rather than proactively learning together to optimise care. An HCA explained there had been one HCA meeting that year, and this had occurred due to "a few disagreements" (Interview 18).

A doctor doing his first medical post in critical care alluded to an underlying culture of presumed acceptance (Interview 20). He intimated that, after a while of working in critical care, there was an assumption that staff acclimatise to the upsetting aspects of the environment. With this viewpoint, intensive experiences become commonplace, rendering the need for formal interprofessional reflections redundant:

“I’m not sure many people go out of their way to say “are you alright about that?” As an F1 (Foundation Year 1 Doctor) in my first job I’ve never had anyone go to me “okay, so are you alright with what just happened there?” ...I think the assumption is, that when you get to a certain stage you just get used to seeing it. But I’m not sure that is always the case, and actually, it is difficult sometimes. I think that’s where my reflection comes in. I go home and think about it a lot.”

Interview 20 Doctor

A consultant confirmed insufficient opportunities for formal reflection; however, he advocated benefits for other colleagues to engage with interprofessional reflective learning (Interview 21). A senior nurse could only recall being part of one formal reflection in her career (Interview 4). Another consultant suggested there may be scope to incorporate debrief, since it was already implemented effectively in theatres (Interview 1). The lack of formal debrief reflections were perceived by participants as missed opportunities for IPL in critical care.

Reluctance to formally initiate debrief may be explained by insufficient training, which one consultant cited as their principle reason for avoiding debrief sessions (Interview 21). Within adult critical care, interprofessional debrief and formal group reflections were reportedly rare. Participants in the study alluded to benefits of learning from other professions through these discussions and recognised they could gain reassurance for their actions. Participants revealed that a lack of training, as well as poor recognition of learner needs, could attribute to the rarity of interprofessional reflection and debrief in adult critical care.

6.4.4 Theory and Training

Theory and training could be completed independently or in collaboration, and it developed and sustained an evidence base to underpin critical care practices. Participants shared their experiences of utilising resources and accessing external training to progress through career pathways and to aid service development. External drivers, such as professional body revalidation, were influential on engagement with IPL opportunities relating to theory and training, and challenges were noted in relation to interprofessionally sharing theory.

Staff independently sought out theory. One HCA explained that different professions, such as nurses, would develop their theoretical knowledge as a ‘separate’ process (Interview 9). A nurse indicated that theory was separate to practice, by claiming that the “reality is practice, but the theory is in a book” (Interview 19). Theory was needed to provide a robust evidence base, to verify the verbal information given by peers in practice. A nurse emphasised that regarding theory and safe evidence-based practice, a ‘concrete source’ of information was preferred, rather than someone’s thoughts which had no tangible underpinning theory to substantiate them:

“I’d rather have a concrete source, than a voice just saying “Oh, mix it up at 50”; I never trust that and I say to people, “if you don’t know, go online to Medusa”, ...it tells you, step by step, how to use it and how to do it. Where some people, they’ll take them on face value and I think that’s quite dangerous.”

Interview 19 Nurse

Staff used theory to guide practice. Processes of revalidation, appraisal, mandatory training, and competency achievement were external drivers to seek out theory and current literature. Field notes regularly observed printed documents on nurse stations, such as journal articles and NMC revalidation documents, as staff found theory to

support their learning. These external drivers promoted uniprofessional learning away from the critical care environment, as the field note shows:

“On the nurses’ station desk: paperwork lying around which has been printed out for CPD (Continual Professional Development) and the NIC is updating the VAP (Ventilator Acquired Pneumonia) care bundle, they note they are having to take work home and to work through the holidays. Q. Is it detrimental to IPL and IP Working when staff have to learn in their own time? Is working outside of business hours promoting silo learning and inhibiting IPL?”

Field Note 10

The questions raised during fieldwork observations were explored iteratively during interviews and further partial participant observations. Knowledge gained independently away from the working environment was not always disseminated or shared, and uniprofessional learning prevented engagement in IPL.

Training and teaching presented IPL opportunities for staff. However, time was needed in addition to people who could teach; these resources could be scarce. The participants working in units without clinical educators felt this made training more difficult to achieve. Formal teaching schedules that were delivered in-house were often intraprofessional but several leaders, such as physiotherapy managers and consultants, attempted to deliver interprofessional training events. IPL opportunities were present in all units, but profession-specific barriers, such as workload, often prevented engagement. This is explored further in the subtheme *Making Time* in section 6.5.4.

Nurses and HCAs were experiencing lower morale because external educational courses, which had been available in the past, were no longer funded. These formal and structured theoretical training courses were valued by staff; one nurse explained

he had “learnt absolutely loads”, it had been “a steep learning curve” and there was a “massive amount to learn” in critical care, so the courses were perceived as relevant and enjoyable (Interview 12). Staff worried that being unable to access formal training and education detrimentally affected their career progression. As a means of accessing courses, a nurse described that critical care units would pay course fees, but staff needed to attend in their own time; “it doesn’t get counted in your hours” (Interview 19). The nurse explained this could be overwhelming, working full time and often leaving shift late. To overcome the sparsity of formal education and training, opportunistic IPL occurred.

Overall, participants viewed hospital organisations poorly for delivering formal education that could lead to IPL, and there remained missed opportunities. In-house formal training had the potential for interprofessional attendees, when invites were extended across professional groups and when mechanisms were in place to facilitate staff attendance to overcome challenges. Several staff shared concern that services would fail to progress when training and theory were not integrated into critical care practices. A nurse indicated that a lack of education slowed unit progression and development, and that “new things don’t get implemented” without educational theory and training (Interview 12). A physiotherapist added there was a need for IPL for future integrated service delivery and to develop professional roles “where people are trained by two or three different professionals” (Interview 14).

Within daily practice, learning by doing and asking questions were common ways of learning in critical care. The depth of knowledge varied and levels of shared information between professionals reflected whether instructions were supplemented

with rationales to enhance IPL. Participants clearly valued theory and training to underpin critical care practice.

6.5 *Critical Care Practices*

The routines and rituals of critical care practices shaped the IPL culture in each environment. *Critical Care Practices* is a theme that captures the regular activities within critical care that affect IPL opportunities. Increased interprofessional interactions promoted opportunities to embed IPL into critical care practices. External drivers, such as competency achievements and recognition of learning, and artefacts, such as notice boards, documentation, and technology, affected IPL culture. Making time for IPL was influenced by the activities, routines, and critical care practices in the environment.

6.5.1 *Regular Activities*

Participants described the types of activities that occurred in critical care, recounting the culture and subsequent expectations for routine that staff held. Routines of care were outlined through descriptions of daily events and the typical critical care day started and ended with scheduled handovers. Handovers exchanged information and were predominantly intraprofessional events; although there were exceptions, such as the presence of a doctor in one unit's nursing handover and in another unit, a nurse in charge would try to attend the medical handover wherever possible.

Handover information was usually one-way communication, which limited learning from reduced interactions. A doctor explained that 'technical formal handovers' of this

nature explain what happened in the previous shift or describe the findings of an assessment (Interview 17). It was observed that there was limited opportunity to interject and ask questions in these events. Whilst some staff sought additional information during handovers, acquired by questioning (see Field Note 8), the primary purpose of handover was to update the team safely and effectively on patients' conditions; it was not performed to enrich learning:

"The registrar on days asked a lot of questions about prescriptions and care plans:

Q: Why is she on frusemide? How low is the sodium?

A: it is high, but probably caused by bicarbonate.

A group discussion about electrolyte balance then occurs with the consultant in charge and the night doctor."

Field Note 8

It became apparent there was latent value for interprofessional attendance during handovers, even if no IPL occurred during the handover process. When professions were more familiar with the practice context and had made a connection with staff by attending the interprofessional handover, participants explained that subsequently, questions could be asked with greater ease. A doctor explained that the formal handover could lead to diagnostic conversations, which could turn into teaching conversations, ultimately leading to IPL (Interview 17). Whilst IPL was possible during handover, an ACCP made it clear that handover was not a time for formal learning (Interview 5). Spontaneous and informal learning that occurred during handover was viewed very differently to attempts to force handovers into formalised learning; staff resisted this practice.

Whilst handover was not perceived as an opportunity for rich IPL, the ward round was. Each unit undertook ward rounds, and these would often involve rotating through the

environment, in interprofessional groups, as patients were reviewed. Ward round practices varied from shift-to-shift and site-to-site. They differed in formality, structure, and professional attendance. Fieldwork observations captured staff conducting bedside ward rounds during which their interprofessional interactions increased, along with increased opportunities for IPL. One doctor believed:

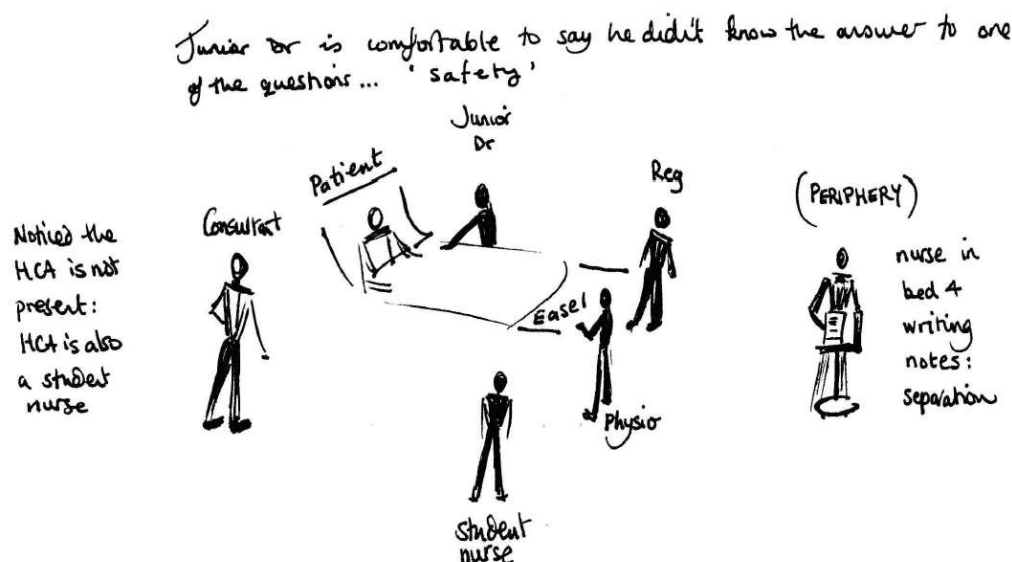
“Informally, the ward round is probably the main place that it (IPL) happens, and this is because there are so many different people on it.”

Interview 21 Doctor

Interprofessional ward rounds optimised interprofessional interactions and supported interprofessional decision-making practices. Small groups of staff, from different professions, were frequently observed using concise communication to collectively conduct interprofessional ward rounds. Ward rounds could also be disruptive, with fieldwork observations capturing up to ten people in attendance on some occasions. They were led by patient need and this created flexibility in the patient review process. Staff attendance fluctuated, as professions broke away from the core ward round team to address patient problems; ward rounds of this nature were more informal, less structured, and increased unit activity, but fragmented learning.

Not all ward rounds were interprofessional. Some were highly structured, formal events that only doctors attended, so learning was insular and intraprofessionally driven. Doctors claimed ward rounds were a rich source of learning and nurses situated in these environments could learn from peripheral participation. A doctor explained ward rounds were occasions to “learn quite a lot” about developing a pragmatic leadership approach and general management “that you can’t read in a book”, and “nurses pick up on” the discussions within the medical ward round and learn

interprofessionally (Interview 21). The field note image below shows how nurses were often close enough to hear learning conversations during ward rounds, and their participation in learning could be increased through listening:



Field Note 8: Peripheral IPL on the medical ward round

As medically led events, the doctor's presence was core to the activity. To support medical discussions, doctors' preferred nurse and physiotherapist attendance to inform them of patient events, providing the context needed for informed decision-making. Nurses were often on their breaks, so were unable to accompany ward rounds. Nurses in charge particularly felt there was limited value in their presence because the bedside nurse was believed to have the most relevant information to contribute to patient care discussions during the ward round.

Physiotherapist presence fluctuated in ward rounds and observations showed they were predominantly absent. Interviews with participants shed further light on the underlying reasons for this and historical practices, lack of spare time and workload commitments all prevented their attendance on ward rounds. The physiotherapists

autonomous practice limited interprofessional communication, so IPL opportunities were missed. Doctors wanted both nurses and physiotherapists in their ward rounds but understood that the working demands of critical care took precedence. Ward rounds were perceived as places for asking questions and exploring rationales behind patient decisions. Spontaneous teaching could transpire if time allowed; however, these opportunities appeared rare and one consultant described them as ‘old school’ in approach, suggesting they occurred more in the past (Field Note 8).

Meetings that reflected on practice presented opportunities for IPL. For example, Morbidity and Mortality (M&M) meetings, although mainly medical, were opportunities to learn from clinical cases. Despite their intraprofessional format, nurses could attend, so there was potential for IPL. MDT meetings were an example of an interprofessional forum and were newly integrated into the regular critical care activities of one unit. Staff spoke of the challenges this meeting presented, including resistance to change, altering routines of daily practices, and creating time for different professions to meet. However, the new MDT meetings were positively associated with people asking questions and increased IPL. Another reported benefit was enhanced role recognition. Participants gave examples of partnership working, and IPL transpired from staff learning about each other’s roles and levels of professional knowledge. The MDT approach was further linked by participants to patient safety, particularly through the maintenance and further development of skills. Working with a variety of professions, with different levels of experience and expertise, helped individuals to learn about professional roles and responsibilities.

IPL was possible before and after MDT meetings. In the moments before meetings commenced, interprofessional interactions were observed and there was space for interprofessional conversations. Informal IPL transpired in these moments, and there was value in this opportunity. IPL also occurred at the end of MDT meetings. Some participants explained that richer learning could be sought from others once the MDT meeting had ended, overcoming difficulties of approaching interprofessional team members during the meeting. Participants articulated that interprofessional presence of staff did not guarantee IPL, but it did generate opportunities for IPL.

6.5.2 External Drivers

Critical care practices were influenced by external drivers, such as competency achievements and recognition of learning. IPL could be driven by competencies and, as staff worked to gain sufficient knowledge and skills to have their competencies signed, interprofessional colleagues would work with them and would give feedback. IPL was reported to happen as part of this process, and a nurse described ‘targeted learning’ that emerged from the structured learning of competencies (Interview 4).

Whilst competencies provided structure and placed the focus on learning specific skills; once achieved, the reality of critical care practice was that assumptions were drawn by others about the levels of staff competence. Once competencies were achieved, colleagues assumed learners were proficient and further learning stopped. Participants expressed concern with this assumption; in their opinion, competencies demonstrated ‘on the spot learning’, this learning was short-lived and therefore a system of CPD was required through ‘exposure’ to different experiences to ensure people maintained and furthered their learning and skills. A senior staff nurse

expressed feeling guilty that she did not make an active effort to ensure that newer staff were supported beyond competency achievement (Interview 7). Participants knew staff skills in critical care required ongoing support and development, but the realities of practice were that completed competencies often ended the rich learning experience for newer staff.

Staff sought recognition of independent learning from peer feedback and validation to consolidate their learning. Confirmation of the appropriateness and depth of learning promoted confidence and ensured that competence was achievable from independent study. Constructive feedback from interprofessional peers was perceived as a way of consolidating learning and of developing correct practices, and enabled uniprofessional independent learning to become interprofessional in nature.

6.5.3 Using Artefacts

Critical care practices were affected by artefacts (objects) in the environment. Notice boards, documentation and technology were objects in the critical care environment which affected the ways that professions interacted and learnt together. All units had notice boards, heavily utilised to convey information to staff. Notice board contents included information about research findings, recruitment, and projects (including this research study), educational training opportunities and social events. I checked notice boards during each field visit and noted that they were updated frequently. The notice boards were integral to disseminating information about IPL opportunities, and staff explained that emails were additionally used to disseminate IPL opportunities.

Critical care, renowned for its use of complex technology, required staff to learn to use equipment to work safely and effectively. IPL, therefore, was often focused on sharing knowledge and developing the competence to use machinery. Critical care relied on technology to communicate between staff members, to engage in learning and to review patient documents and investigations. Telephones, bleeps, and electronic referrals were utilised to communicate with interprofessional colleagues. Telephones could be useful; one unit had telephones in every bed space and, although learning via this means was possible, opportunities for rich learning were perceived to be limited by participants. Telephones caused interruptions to critical care practices, disrupting interprofessional conversations and activities and, participants who were conscious of this explained that they felt embarrassed to be the cause of interruptions, making telephone communication brief, which hindered IPL.

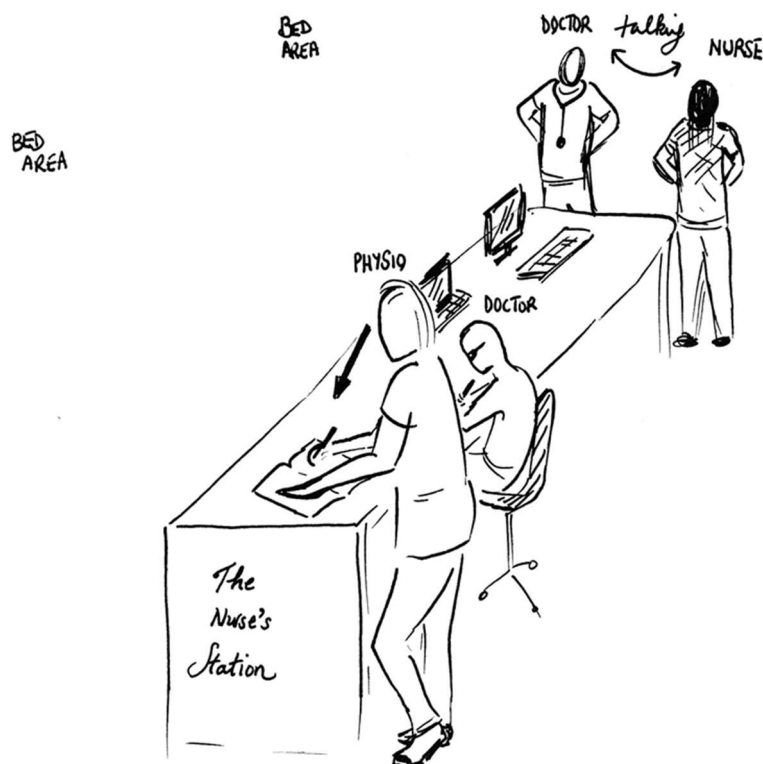
Electronic patient referrals, alongside telephone calls, prevented face-to-face contact between staff. Interprofessional interactions were limited or removed entirely from the process by using technology, and this bypassed opportunities for interprofessional interaction that could have led to IPL.

Learning was aided by computers through e-learning and the internet. IPL was not possible with these isolated activities and participants explained that development of this nature pushed learning activities outside of the clinical environment as staff worked independently. Whilst it was clear that technology featured prominently in critical care, it was viewed as a substitute for interprofessional interactions and as a distraction to current activity; however, it was recognised that technology could create a focal point for staff to collaborate. This was evident with mobile technology, such as

hospital computers on wheeled units; valued for their use in comprehensively planning and executing patient care plans during ward rounds. Evidently, this technology benefited the ward round, and patient care was more fluid and less disjointed. In terms of learning, a doctor explained that ‘on-hand’ technology was viewed as an enabler of spontaneous learner driven IPL, which facilitated ‘teaching, there and then’ and generated a ‘good environment to teach, learn, share and swap ideas’ (Interview 21).

With regards to IPL, the role of technology in critical care was contentious. Even when it worked well, participants believed that face-to-face IPL activities were superior to technology. They explained that face-to-face learning of practical skills, through practice based and verbal discussions, were of primary importance and remained the preferred means of learning together in critical care.

Documentation, such as patient notes, medical charts, guidelines, and policies, were utilised in critical care practices. One registrar emphasised that in the absence of the bedside nurse, information could be sought from the charts or from nursing notes (Interview 13). Notes could be completed separately, and the image overleaf from field note 1 demonstrates a cluster of interprofessional staff completing documentation but working in isolation:



Field Note 1: Isolated interprofessional working with artefacts

The field note image above shows a range of interprofessional staff occupying the same physical space, working on either computers or writing on paper notes, not acknowledging each other as they worked. IPL was rarely achieved via documentation in this way; however, sideways conversations did occur at times between professions as they worked. Staff became more visible to the wider team when notes were completed beside each other and would often be approached by other colleagues. These interactions promoted IPL opportunities through increased interprofessional presence, proximity, and visibility (discussed in 7.3.3 *Interprofessional Presence*).

Patient notes could be interprofessionally combined, described by one consultant as ‘contemporaneous’, who explained it had been a deliberate choice to have all

professions writing in the same place (Interview 21). The chronological patient story that was produced in patient notes was viewed as making it easier to learn from, and as multiple professions completed the same documentation, it was believed to give more scope for IPL through the documentation. Professions reading the interprofessional notes could learn about ‘usual practice’, but notes tended to be instructional and descriptive; therefore, participants suspected that rich IPL was limited via documentation. Some doctors added they could not read nurses’ notes because they were untrained to, so it was easier to ask questions in person. The value of critical care documentation with regards to IPL came from creating further discussion and learning between professions; therefore, documentation was a prompt for deeper IPL through facilitating questions and interprofessional discussions.

6.5.4 Making Time

Making time for IPL in critical care practice was viewed as challenging by participants in terms of interprofessional workload and the time of day. One physiotherapist explained that time to teach and support colleagues to the level required was not always available (Interview 6). A consultant highlighted that a lack of perceived time and reluctance to change, presented barriers to IPL in critical care practices and staff could become “set in their own way of doing things”, which meant that they were less open to other ways of learning, such as IPL (Interview 1). In light of the spontaneous nature of IPL, he noted that task-orientated approaches were interspersed with “micro-moments” for IPL. These potential moments were ‘short-lived’ and, as such, he questioned their value. The consultant was conscious that IPL opportunities were present in critical care, and he acknowledged the need to make time in the day for IPL and to reconnect staff to increase IPL opportunities throughout the working day.

Whilst staff workloads fluctuated, engagement in IPL was perceived to be detrimentally affected by excessive work demands. The differing working patterns of professions created conflict and missed opportunities for IPL. Physiotherapist workloads in particular created a reluctance to go to critical care. A senior physiotherapist explained this was because the physiotherapy team have individual workloads that they had to 'finish' (Interview 14). In smaller units, where there were fewer, less complex patients to review, physiotherapists spent little time in critical care. This reduced interprofessional interactions and opportunities for IPL and, consequently, such situations resulted in physiotherapists feeling excluded from teams. The challenge for physiotherapists was to spend sufficient time in critical care to develop skills and to retain them, to maintain levels of competence. Participants linked increased visits to critical care with increases in skills, confidence, and competence, and they also noted a reduction in stress that could be associated with the visit.

Participants drew assumptions on the working practices in critical care with regards to IPL activity. They explicitly linked time spent present on the unit to IPL. For example, nurses in one unit were transitioning to new shift patterns, and they predicted there would be less IPL, as they spent less time on the unit. Nursing staff turnover was also problematic, and doctors recognised the challenges of working with new nurses, acknowledging that high nursing staff turnover affected doctors' patience at times, as the complex nature of critical care practice created time constraints, and the time needed to answer questions and teach nurses was viewed with frustration. Interestingly, nurses did not express negative opinions with regards to doctor rotations, which were regular and unavoidable events, unlike staffing shortages which were unintended. HCAs gave time 'back' to nurses; their supportive role protected time for

nurses in the bed space and reduced their workloads overall. It was unclear how nurses benefited from this assistance in terms of IPL, although team working between staff was apparent and sharing workloads gave the potential to make time for IPL.

When workloads were excessive, staff explained they took work home with them to learn and develop new initiatives and practices. This uniprofessional learning diminished interprofessional interactions. One HCA described this as a ‘weighing scale’, as staff experienced conflict between finding time for IPL in the shift, amidst fluctuating workloads (Interview 9). Consultants shared a desire to create ‘IPL moments’ in the day, that had structure and regularity in critical care practices; however, scheduling formal IPL was considered difficult due to staffing levels, and it was viewed as an idealistic opportunity to learn rather than pragmatic. One consultant intimated that, if formal IPL events were introduced into critical care practice, it would be met with resistance from staff, as “the human default to change is resistance” (Interview 1).

The time of day affected IPL. Nightshifts were calmer, presenting what an HCA believed was “more of an ideal opportunity to start asking questions” (Interview 9) and a nurse felt that staff would take ‘a lot in’ (Interview 7). With fewer visiting professions at night however, uniprofessional or intraprofessional learning was more likely to occur, and IPL levels during night shifts were reportedly inconsistent and limited. Interprofessional interactions were notably different during weekends too. Interprofessional staff were observed spending longer in the patient’s bed space and the more relaxed atmosphere seemed to encourage professions to spend longer together. Physiotherapists in particular, who were on call to cover critical care, were

observed as being more present at weekends because they were often on their own, so it took longer to review patients. Doctors found themselves in a similar position, meaning that learning from other professions was likely to increase at the weekend; there were more opportunities and more time for informal IPL to transpire.

6.6 *Summary*

This first findings chapter has explored the overarching theme *Embedding IPL* in critical care. The three themes presented offer a rich description of the IPL culture of critical care and consider the influence of the environment and the ways staff learn together as they engage in critical care practices.

The critical care environment influenced the opportunities for different professions to learn together. Space was highly valued in critical care and when constraints occurred, staff would modify existing areas to create learning zones that accommodated IPL activity. Extremes of lighting, noise and temperature in the environment were all detrimental to IPL. Therefore, the research shows a relationship between physical environmental factors and IPL.

Four key stages to IPL were constructed from the research findings: independent learning and preparation, asking interprofessional questions, learning by observation and consolidating new knowledge through dissemination. Asking questions was postulated as the most prominent means of engaging in IPL for critical care staff, and ward rounds were the most common critical care activity for IPL. The provision of a rationale to supplement instructions encouraged IPL, and this practice was based on

practitioner assumptions of existing knowledge levels. Findings showed that the greater the knowledge differential between staff, the less knowledge exchange occurred. Actively learning by doing, and theory and training were valued for their role in IPL; however, the IPL culture in critical care was challenging in view of increasingly uniprofessional and isolated approaches to learning.

The variety of critical care practices presented numerous examples of professions working together, and when professions interacted in critical care, the scope for learning from others through participation in IPL increased. IPL was promoted by regular interprofessional activities, such as ward rounds and MDT meetings. External drivers for IPL included professional body revalidation and competency achievements, and artefacts in the critical care environment affected levels of IPL participation. A barrier to embedding IPL into critical care culture arose from the challenge of making time, and fluctuations in professional workload and the time of day, meant that participants were charged with making enough time, at the right time, for IPL.

This chapter intimates the complexity of embedding IPL culture into critical care practice and offers a rich description of IPL practices within the clinical environment. The subsequent chapter, chapter seven: *Collaborative IPL*, explores the collaborative nature of staff working and learning in critical care.

CHAPTER 7: COLLABORATIVE IPL

The second findings chapter presents the overarching theme of *Collaborative IPL* and reflects the close relationships between staff whilst working and learning together in adult critical care. The findings showed that learning between professionals is enhanced when staff worked together more; IPL was increasingly evident in the environment. This overarching theme comprises four themes, exploring the nature of staff influences, collaboratively building relationships, forming a community of critical care practice, and recognition of the factors that can disconnect IPL.

7.1 Chapter Overview

This chapter begins with the people within the environment, working as part of the healthcare organisation, as individual practitioners and as members of groups. Critical care staff profoundly influenced IPL culture, particularly in terms of their professional and leadership roles, and presence within the environment. Discussion proceeds to explore the relationships between staff in the environment regarding the ways staff collaborated through professional networking, fostering openness, and developing relationship attributes that underpinned IPL. The concept of holistic IPL is introduced, and critical care is presented as a distinct CoP, influenced by socialising and varying professional perspectives, but with commonality, such as shared values and language. Whilst participants could perceive the CoP as a ‘work family’, the chapter closes by discussing the disconnections between staff that deter collaborative IPL, such as tension and learning alone.

7.2 Visual Thematic Map of Findings

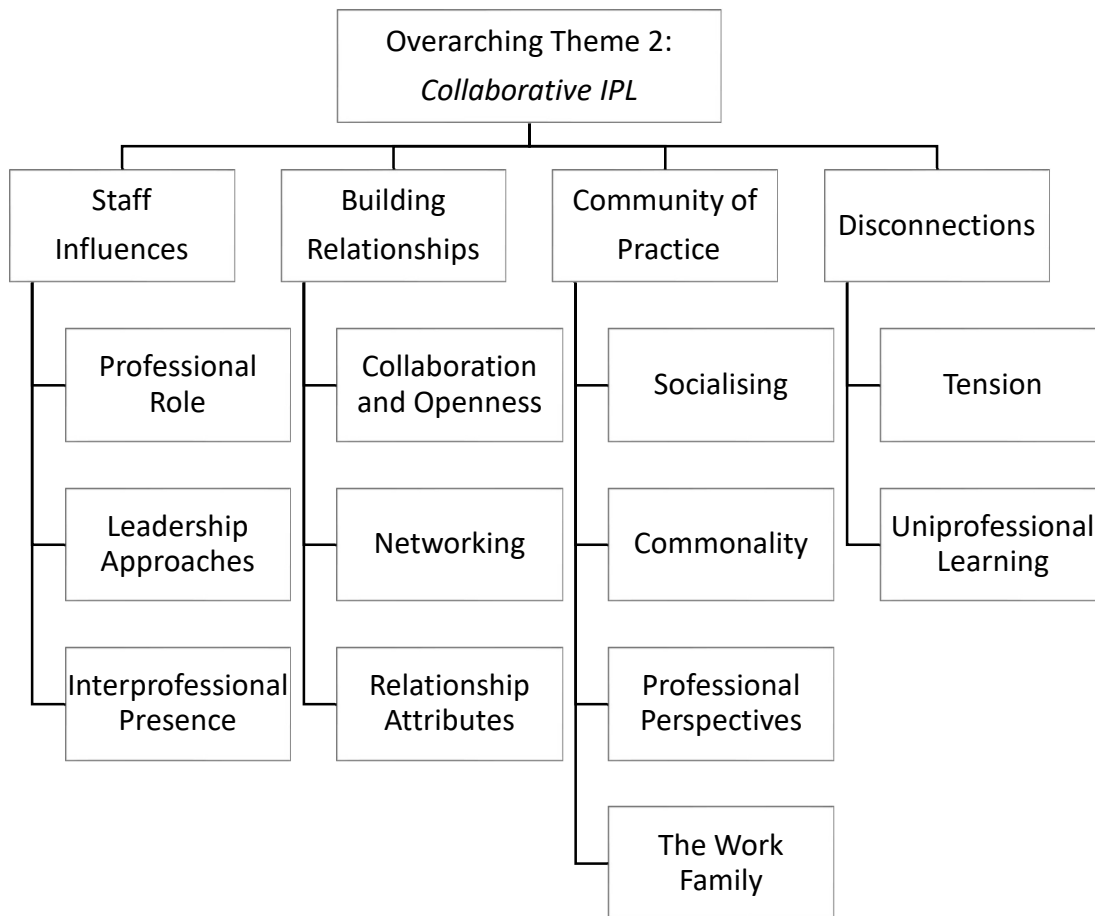


Figure 7.1 Visual thematic map of findings: Collaborative IPL

7.3 Staff Influences

The theme *Staff Influences* is constructed to represent a versatile group of people, all working and learning together in critical care. IPL was influenced by the role that professions assumed, the visiting professions who entered the environment, the leadership approaches that were adopted and staff presence regarding proximity and visibility to others in the environment.

7.3.1 Professional Role

Participants emphasised that learning about and learning to work with other professions was fundamental to effective critical care provision, and staff learnt with and from each other about their roles. Professions were often recognisable by their uniforms but in RS2, this was challenging. Insufficient awareness of professional remits provoked confusion, and visiting professionals further complicated this identification process. Uniforms were associated with role recognition and learning was negatively affected when roles were unclear.

Many professions worked in critical care, with some more prevalent than others. Doctors were perceived as accessible, in person or via the telephone. They were regarded as ‘well-trained’ professionals, who engaged in ‘lifelong learning’, following structured education and professional development. Doctors preferred structure to their day, illustrated by regular meetings, handovers and ward rounds, and this made their movements during shift predictable. These patterns of behaviour helped to locate doctors, aiding interprofessional interactions and promoting IPL.

Doctors displayed certain characteristics and traits of dominance, leadership, and confidence, with a tendency for intraprofessional working. Field notes captured posture, body language and doctors’ dialogues during shifts, illustrative of power and dominance in the team as shown below:

NUASES'
OFFICE:
DOCTOR
HANDOVER

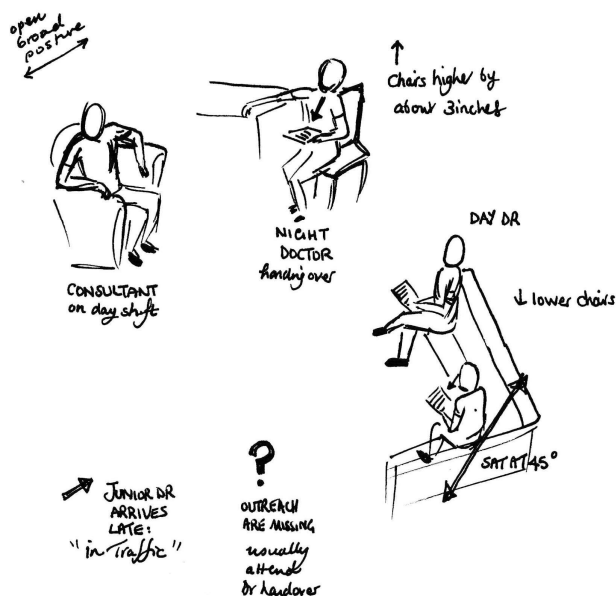
Different doctors handed over from night shift to
update the Consultant and the day team,
using handover sheets.



Field Note 2: Doctors behavioural traits during interprofessional handover

DISCUSSED ARREST CALL OVERNIGHT. 86 YEAR OLD LADY HAD A
PACEMAKER FITTED YESTERDAY AND UNSUCCESSFUL RESUSCITATION
OVERNIGHT FOR PEA. STAFF SHOWED EMOTIONS AND EMPATHY.

NURSE ADDED EXTRA INFORMATION TO PATIENTS HISTORIES
TO INFORM DOCTORS OF PATIENTS PROGRESS eg. NUTRITION



Field Note 8: Doctors behavioural traits during interprofessional handover

Large medical teams had highly structured hierarchies and operated using rotations. Doctors were responsible for patients in critical care, but were called away to assist off site, during cardiac arrests or patient transfers. A registrar explained his role involved patient assessment and planning patient treatment, but had an educational element, supporting junior doctors, educating nurses, and providing rationales and explanations for treatments (Interview 13).

HCAs often covered the whole of the critical care environment. They were largely responsible for equipment and provided assistance to colleagues. HCAs were primarily “there to help and to be on hand” and were described as the ‘runner’ when equipment was needed (Interview 9). Most of their time was spent with nurses, and the ease of communication observed between HCAs and nurses, rich with questions and learning, reflected this close working relationship. An HCA explained they helped the unit to ‘run smoothly’ (Interview 8) and a doctor observed that HCAs could teach people about the way the unit worked and gave insight into patients’ social situations (Interview 3).

As the constant presence in the patient bed space, nurses interacted with all professions and were the cornerstone of many IPL activities. Nurses were often given the extended responsibility to educate staff, and nurse educators were appointed in some critical care units. When present, participants intimated that formal learning opportunities increased. One consultant explained that educators, by virtue of their role, were “much better at imparting knowledge”, were “far more verbose” and were able to “put things over in a more understandable fashion” than he could (Interview 21).

Nurses worked well with physiotherapists and were regularly seen talking with doctors about patient care. One doctor explained that “nurses are the most accurate measurement you have” to detect acute changes in the patient’s presentation. Nurses viewed patients holistically and were central to collaboration:

“...it’s always the nurse pulling everyone together. It’s always the nurse who has to ring the physio, has to tell the physio what’s happening, has to liaise with the dietician, has to speak to the microbiologist and let the doctors know what’s happening throughout the day and I think if there wasn’t a nurse there, I think it would all fall to pieces.”

Interview 19 Nurse

Observations and staff discussions showed that doctors, HCAs, and nurses were the most prominent professions in critical care. Physiotherapist presence varied across the research sites, ranging from twice daily visits to being permanently based on the unit. Physiotherapists had limited interprofessional interactions and were autonomous and patient focused; yet, were regarded as core members of the team. One physiotherapist explained that in his role he was “a point of reference for medical and nursing staff for any issues that came up” and that he did not ‘formally’ take part in the ward round but could intermittently contribute (Interview 22). A nurse claimed that physiotherapists were more likely to learn with nurses, but interprofessionally, they would rarely speak to doctors (Interview 19).

With professional focus on muscular-skeletal and respiratory function, physiotherapist input was valued for contributions to patient rehabilitation. As a profession, physiotherapists were regarded as knowledgeable because they worked throughout the hospital. Their contribution to patient treatment could account for their inclusivity as

core members of the critical care team, despite their variable presence, reduced interprofessional interactions and limited IPL engagement.

One physiotherapist believed that recent focus on rehabilitation after critical illness had raised the professions 'exposure' in critical care; consequently, the role was "more recognised and better understood" (Interview 3). However, she felt the physiotherapist role remained 'undervalued' for its skills. Experienced critical care nurses were sometimes described as less open to change, and this was attributed to the previous culture of the physiotherapist role, which had been less active and more passive.

Critical care had broadened the roles of its core professions. HCAs had extended to critical care assistants (CCAs), physiotherapy had physiotherapy assistants (PAs), and advanced critical care practitioners (ACCPs) were a tier of professionally registered nurses or physiotherapists that complimented the junior doctors, working within the medical speciality. Staff with extended roles were perceived as easier to approach, increasingly knowledgeable and more engaged with IPL.

An ACCP explained they "essentially do the same job as a junior doctor on intensive care", and a nurse supported this, claiming they treated them the same as doctors, although found them easier to talk to because of their previous nursing experiences. Staff that were easier to talk to were more approachable and this promoted IPL. A doctor revealed initial uncertainty when the ACCPs were integrated into the team:

"...watching how the juniors interact with the ACCPs, which is probably what I did when I first started, because we're not really sure how to take them, whereas you realise eventually that they

are really experienced nurses that will back you up, rather than competition for jobs and lines and things.”

Interview 4 Doctor

Extended roles took time to embed into critical care and IPL culture. ACCPs no longer affiliated themselves as nurses, and the transition had required clear professional boundaries to be regularly articulated to other colleagues. ACCPs were knowledgeable and experienced, and enhanced IPL:

“I’m an advanced critical care practitioner, so I essentially do the same job as a junior doctor on intensive care, working at a kind of junior registrar level. ...So every one of us has significant critical care experience, as either a nurse or a physiotherapist. I was a nurse before I started this job, so we’re all very used to working in this kind of high octane environment.”

Interview 5 Nurse

HCA's whose role had extended to CCAs, were perceived by a nurse as an underutilised source of knowledge for others in the team (Interview 4). CCAs were frustrated by the erosion of their clinical skills, and how close their role was to nurses, but how far they remained from increasing their theoretical knowledge and skills to perform additional clinical tasks:

“The CCA wants to progress but is at the top of his band and essentially has nowhere to go in the department. ...Conflict was described for him in terms of wanting to progress and regain his skills ... to do that he would have to leave the unit or do nurse training, which would be hard for him and his family.”

Field Note 4

Staff with extended remits vocalised role boundaries, and staff responsibility within the existing professional framework needed to be clear when adding new layers to the team. Clear understanding of professional roles enabled IPL because staff were viewed as knowledgeable and approachable, which enhanced IPL opportunities.

As more professions collaborated, more opportunities for IPL were created; however, professional visitors to critical care presented challenges. Notwithstanding issues relating to distinguishing uniform with professional roles, the behaviour of professional visitors could create conflict. One unit had developed a behaviour code for visiting professions, which defined the boundaries of decision-making processes and interventions that visiting professions could initiate with critically ill patients. A consultant explained this code related to actuating trust and respect for the expertise of the immediate critical care team, to ensure patients received the safest and most effective care possible (Interview 21). Often, visiting professions lacked a therapeutic relationship with the critical care team; this was illustrated on one occasion when a patient was reviewed by a surgical doctor and the nurses were uncomfortable with the treatment changes initiated to the patients' care plan (Field Note 6).

There was increased potential for IPL when visits coincided. Morning visitors would include pharmacists, microbiologists, and the surgical team. Afternoon visitors could include oncology teams and dieticians. Formal meetings, such as MDTs, were linked by participants to increased IPL opportunities. The range of professions within critical care greatly shaped the interprofessional interactions between staff, and subsequently, IPL opportunities varied. Participants agreed that to learn and work with other professionals, their role in critical care needed to be understood, so the team knew who to approach with questions and where to access appropriate specialist knowledge. Management of the professions involved in critical care was therefore complex, and leadership approaches (the next subtheme discussed) were highly influential on IPL culture.

7.3.2 Leadership Approaches

IPL was affected by hierarchy, staff roles and levels of empowerment. IPL activities were influenced by the perceived power held by team members, and IPL culture permeated down from organisational leaders. Critical care units were observed to be consultant led, but nurse managed; participants across all professions explained that nurses ran the critical care units. Learning was frequently target driven, and professional team leaders were tasked with meeting standards through staff training and development. Leaders additionally directed staff towards IPL activity, as a means of developing the expertise of their teams. Many services required an integrated approach to management and as professional roles were defined within working groups, interprofessional knowledge enhanced through IPL.

Leadership styles influenced the MDTs effectiveness. The critical care manager was responsible for overseeing the practice of MDT working and their philosophy shaped the interprofessional engagement of the wider team. Teams that worked well together were described as ‘cohesive’. A physiotherapist explained that the most cohesive wards worked better together when everyone was there, when they all shared ideas and talked to each other, so everybody had an input into patient care (Interview 15).

The challenge for leaders was to lead by example. One doctor explained the leader had to be a role model to the wider team (Interview 17). To promote collaborative IPL leaders needed to increase interprofessional interactions between colleagues, so that IPL opportunities could be enhanced. Leaders recognised that culture took time to change and role modelling facilitated changes in IPL culture. A doctor explained that IPL culture permeated down from leaders within an organisation; leaders and

managers' behaviour reflected the lines of hierarchy and culture in the organisation (Interview 17). Leaders were influential drivers of IPL practices in daily critical care culture. To promote IPL, other desirable leadership attributes were identified. For example, a doctor explained the importance of staying calm in a crisis, to share knowledge and expertise with others (Interview 3). Being empathetic towards staff, giving positive feedback and showing gratitude were also highlighted. For people learning together in critical care, leadership approaches could significantly affect levels of IPL engagement and the IPL culture.

Critical care doctors were principally responsible for overseeing clinical decisions, although all professions in the environment made plans and contributed to patients' holistic care. Doctors discussed nurse empowerment with decision-making and believed empowering critical care nurses to make informed clinical decisions optimised patient safety, improving the effectiveness of patient care decisions. Doctors had learnt to share knowledge with nurses to empower them to make informed decisions. In these situations, IPL between the doctor and nurse enabled patient treatment regimens to be effectively implemented. IPL empowered team members to make decisions within previously agreed parameters:

"...if they (nurses) know what to do if something changes in the patient condition. If saturations drop, if blood pressure drops or rises, then a patient gets much better treatment with a shorter loop so to speak. So yes, I want them to be empowered to absolutely within their competence, to make decisions and also obviously to be able to question decisions which they don't understand."

Interview 17 Doctor

This consultant emphasised when staff were skilled and competent, and fully understood their role within the team, the team worked well and became as "safe as it

can be”. The role of the consultant to ‘oversee’ patient care was only considered possible when all team members fulfilled their individual roles. An integral part of being a critical care team member was therefore to learn the role and responsibilities of each profession, to function as an effective critical care unit. The consultant further explained, being “bogged down in small detail” outside of the consultant role prevented him from “seeing the big picture”. When a team approach was taken to supervise and check decision-making processes, “lines of safety” strengthened between the staff members making decisions and the patient receiving the intervention. Error detection improved with collaboration, and by empowering professions to ask questions and to challenge the decisions made by senior staff, critical care was safer and more effective. It was felt that staff are unable to question team members when “they don’t know or have the competence”. Therefore, IPL was needed to ensure that staff in the critical care team had gained sufficient knowledge from each other and had developed the competence required to identify and prevent errors.

7.3.3 Interprofessional Presence

The experience of people learning together in critical care was shaped by their presence in the environment. The physical location of staff on the unit was linked to the exposure that professions had with each other, and the connections they made following interprofessional interactions. Since the nurse was recognised as having a constant presence on critical care, this increased their visibility and proximity to others in the team; with these aspects of presence fulfilled, increased interprofessional interactions occurred, leading to IPL engagement. The visibility of staff working in critical care was more favourable for IPL engagement than the proximity of staff. This was an unexpected relationship that became apparent as the research progressed.

The term proximity refers to the space between staff, and an advantage of working in close proximity included learning by listening. Observations throughout the fieldwork captured many instances of professions being situated close to learning experiences. The potential for IPL for those situated near to zones of active learning was questioned throughout observations, and interviews explored the perceived levels of IPL in these instances. For example, a doctor indicated it was possible for staff to learn from peripheral participation and learning by listening (Interview 13).

MDT meetings created formal opportunities for professions to work together. Closer working relationships increased interprofessional interactions and IPL opportunities were enhanced. However, participants explained that a rise in the presence of staff in critical care could potentially disturb patients, distracting staff and lowering concentration levels. These risks were detrimental to IPL, and the context of the care situation needed consideration when promoting closer working of staff.

The term ‘visibility’ represents an additional aspect of staff presence; staff could be both present and in close proximity to each other, but this could be unrelated to how visible they were to others in the environment. Staff wanted to see each other as they worked. Visibility promoted effective communication, it factored interpretation of body language into discussions and made seeking out others easier. Being visible in the environment augmented familiarity between people, enhanced interprofessional communication and led to a more inquisitive atmosphere, where questions were asked between professions to improve knowledge. Enhanced visibility created a more dynamic and interactive environment, which promoted IPL.

Participants linked several factors to visibility and IPL. Isolated practices and time restrictions limited staff visibility. The severity of patient illness could also ‘pull staff away’ from each other, focusing on the patient with complex care needs. One physiotherapist suggested an inverse relationship between hierarchy and visibility, and from her experience, as doctors progressed through their careers, less contact was made with other professions and collectively they became less visible as a professional group (Interview 16). This resulted in less interaction, prevented shared knowledge and experience, and created missed opportunities for rich IPL.

People learn together in critical care by being present, knowing individual roles and knowing where to find each other. Collaborative IPL was promoted when interprofessional presence was optimised. Essentially, when few professions were present, interactions were limited, but with too many professions the context of the environment prevented IPL engagement. IPL was optimised when staff worked in close proximity to each other and when they had clear visibility. Staff visibility had greater influence on IPL situations than staff proximity, and the IPL examples set by leaders shaped the behaviour of the critical care teams overall.

7.4 *Building Relationships*

Critical care as an acute clinical environment involved many different staff, who all needed to work together to provide safe care to critically ill patients. When the critical care team worked well together, it created a working environment conducive to IPL; collaboration affected learning in critical care. One consultant defined collaboration as “working together for a common goal, which is the patient” (Interview 1). IPL developed from interprofessional therapeutic relationships built on a complex

foundation of support, rapport, respect, gratitude, manners, trust, and team spirit. Supportive situations observed during clinical tasks included staff offering help, sharing workloads, and offering emotional support. Additionally, discussions with participants revealed instances of inequity in the team and historical tensions.

7.4.1 Collaboration and Openness

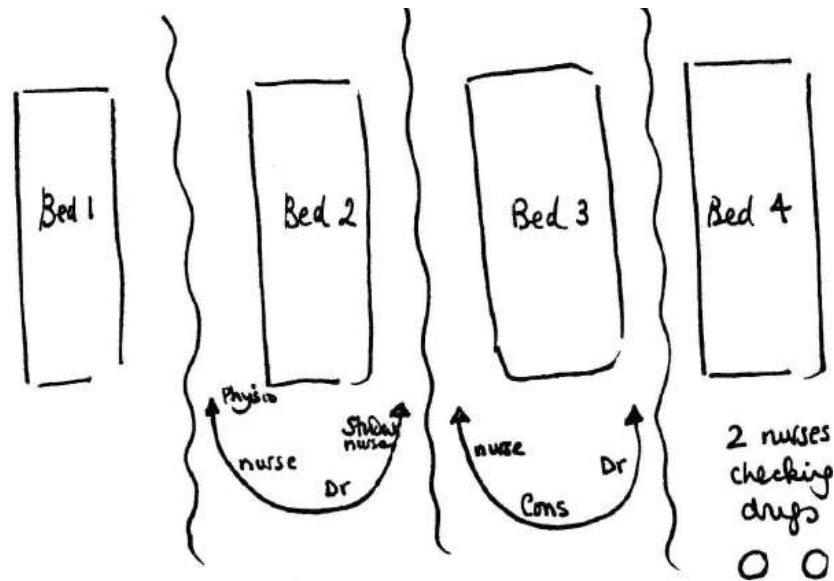
Critical care was regarded by a doctor as a very demanding and complex environment to work in (Interview 3). He asserted that the goal of IPC was to get everyone calm and relaxed, to quickly solve acute problems, whilst working together rather than in opposition. Professions were observed collaborating during clinical decision-making, planning, and providing care to patients. Participants emphasised that clear communication was required to work together well.

A doctor explained that to have a culture that promoted IPL, staff needed to communicate openly, to ask questions to increase their understanding, and breakdowns in communication made learning difficult (Interview 1). A physiotherapist described how open communication enabled interprofessional interactions, and talking to others extended practitioner knowledge, especially when this involved different professions or unusual situations (Interview 2). Another physiotherapist explained that levels of knowledge notably differed between professions, and increased dialogues enabled professions to work ‘more cohesively’ (Interview 16).

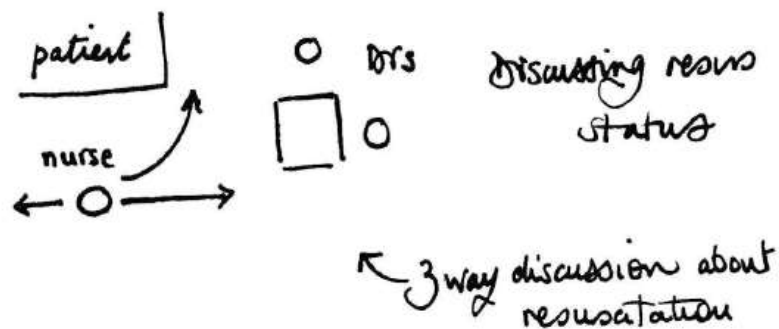
Staff had to learn how to collaborate, and IPL developed collaborative working skills. Collaborative working was beneficial to service development and to patient care,

promoting patient safety and recovery, and a doctor emphasised that staff had to learn how to engage in team working (Interview 3). To implement integrated services, a physiotherapist explained it was vital that different professionals worked together for significant periods of time, to develop professional relationships and to learn to work together (Interview 2). Projects were identified by another physiotherapist as a means of achieving this, giving professions a shared focus, and providing opportunities for feedback between those collaborating (Interview 6). This was apparent with the national initiative of Rehabilitation after Critical Illness (RaCI) published by the National Institute of Health and Care Excellence (NICE, 2009), and participants described it is a driver for integrated and collaborative services in critical care, promoting collaborative working and leading to opportunities for collaborative IPL. However, funding was difficult to secure for collaborative projects, and a senior physiotherapist agreed that whilst external drivers such as NICE guidance, could give the interprofessional team a common goal, limited funding prevented IPC, and this inadvertently reduced IPL opportunities (Interview 14).

Professions collaborated during ward rounds, patient reviews and huddles, and patient decision-making was preferred when it was interprofessional. Field note images captured moments of collaboration between professions; staff were positioned in interprofessional arcs around the patient bedside (Field Note 9) and clustered around easels discussing patient care (Field Note 17). IPC was integral to daily practices, it fostered mutual respect, increased visibility of professions, opened 'lines of communication' and promoted collaborative IPL.



Field Note 9: Interprofessional arcs



Field Note 17: Interprofessional collaboration around easels

IPL was more than agreeing a plan for the patient; a consultant described IPL as a gradual and accumulative process:

“There are day-to-day little micro moments where you have a couple of sentences explaining, a couple of sentences around a patients problem and ... you come together as two professionals and you’ve got a plan for that patient and there may have been a discussion around the evidence, around the best treatment option for that patient and by its nature you could say that there will be something that will stick. You’ll be using your applied knowledge and experience to apply to that patient ...there probably has to be more to it. It clearly has to be more than just

a prescription of treatment. ...IPL is complicated ...without collaboration in the team, it isn't going to be a very good working environment or learning environment."

Interview 1 Doctor

The consultant shared an interesting perspective that IPL could include reinforcement of current knowledge levels, not always 'acquiring' new knowledge. He claimed staff needed to be open to change or improvement for teams to learn (Interview 1). Therefore, there were moments when staff collaboration did not overtly contribute to IPL; collaborating in critical care did not always generate new knowledge.

Collaboration was promoted by openness and friendliness, forming therapeutic working relationships. Participants used these terms, and one doctor attributed these features to his role fulfilment and continued desire to work in the unit (Interview 13). A physiotherapist explained discrete bodies of professional knowledge can be easily tapped into through an open environment and discussion (Interview 2). The open environment encouraged asking questions and created a culture of collaborative IPL when people sought guidance and observed interprofessional practice.

Observed examples of openness included staff being 'wrong' and openly acknowledging errors in judgement or knowledge limitations. A nurse claimed that new staff found it challenging to be open and asking questions constantly could be frustrating (Interview 19). However, an open critical care unit supported staff, was patient and promoted IPL. Conversely, a physiotherapist explained that if a unit was closed to IPL and collaboration, uniprofessional working was readily experienced and critical care became less open to ideas; it was not current in its practice and was notably

less cohesive than other clinical areas (Interview 15). Learning was described by a nurse as stifled when the environment was not open (Interview 12) and staff reported benefits from openly discussing thoughts and feelings as they collaborated in critical care. A physiotherapist noted that critical care units experienced reduced openness when consultants were reluctant to learn in new ways and this created resistance to IPL (Interview 15). One consultant attributed the “fairly open culture” in their unit, to being able to openly discuss cases and to deliberate plans of patient care (Interview 1).

Leaders affected the openness of critical care and affected collaborative IPL. A nurse emphasised the critical care environment needs balance between an open collaborative culture, wherein people can talk, communicate, and exchange ideas freely, with sufficient formality and standardisation to maintain professionalism (Interview 12). Professional networking (the next subtheme discussed) achieved this balanced approach to IPL.

7.4.2 Networking

Networking in this thesis is constructed as the professional act of creating connections with colleagues in the pursuit of optimising daily critical care practices. Networking served many purposes, promoted IPL opportunities, was conducted in different ways and a number of barriers were indicated in critical care.

Networking with others was useful to collaboratively plan and deliver patient care. Doctors described networking with nurses to obtain patient updates and to create care plans. One doctor explained he got to know the nurses best in the morning, ‘pre-ward round’ (Interview 3). He had learned how to approach tired staff and worked closely

with them to ensure “they were on the same page” and were prepared for the ward round with a co-created plan, ready to collaboratively ‘steer’ the consultant’s decision-making. A nurse highlighted that networking helped to identify people’s level of knowledge and skills (Interview 4). Networking revealed hidden skill sets and, when disclosed, these complemented the overall function and knowledge of the team.

Participants recognised the value of getting to know colleagues to collaborate and engage in IPL. An HCA believed that interprofessional networking helped others to learn, particularly new staff (Interview 9). A physiotherapist described a reciprocal need for people working together to get to know each other, and the process of networking was ‘important’; giving the individual the ‘freedom’ to become themselves within the team (Interview 14). Another physiotherapist recalled instances they had previously worked with critical care staff, and this familiarity and existing relationship developed from earlier networking increased IPL engagement (Interview 16).

Networking was linked to the provision of evidence-based practice. It was considered as a “hugely important thing” by a nurse, explaining it was difficult to stay abreast of change and it was challenging to implement evidence-based practice into critical care without networking (Interview 12). Networking outside of critical care was perceived beneficial for gaining practice insight, and benchmarking and observing practice was suggested as a means of achieving this. Externally networking enabled staff to:

“...see how similar teams work ...to find something new and bring it back.”

Interview 15 Physiotherapist

Conferences were one opportunity advocated by nurses, although one nurse argued that opportunities from regional and national networks would rarely come directly to staff working in critical care, so networking was largely dependent upon their ability to attend conference events (Interview 12). Educational courses were another valued opportunity for staff to learn about the work of other units, bringing back new information that could shape daily critical care practices. An HCA explained:

“It’s very important what the [nurses] learn at university, academically, because quite often that sparks off something and it’s mixing with people from other hospitals and other ITUs. ...because we’re such a small insular place, it’s hard to find out what’s going on elsewhere. So the nurses that are doing further academic learning at university will quite often come back with information, from something that they’re learning on the course, which is obviously more current.”

Interview 10 HCA

When staff networked with other specialities, it provided more knowledge to disseminate to the critical care team and networking with other specialities was widely regarded as a way of providing better services. Networking, collaboration, and IPL were affected by individual behaviour. Therefore, when professions did not network or collaborate, IPL was detrimentally affected. Doctors and physiotherapists rarely networked. The nurse was regarded as a ‘messenger’ by one doctor when they acted as an intermediary between these professional groups (Interview 20). Key personnel were sometimes missing from critical care teams, such as pharmacists and nurse matrons, and participants discussed these situations, claiming many IPL opportunities were missed due to lack of networking or appointment of key roles within the team.

Participants alluded to specific professions in the team who were more likely to network. Nurses were described by one physiotherapist as the present, visible,

supportive profession, who would consistently give physiotherapists the information they needed to do their job so that they could work and learn together (Interview 15). Conversely, several physiotherapists were frustrated by limited opportunities to network with consultants. One nurse explained that consultants, whilst knowledgeable, had their own job to do and their own staff to educate; this was perceived to prevent them from engaging in networking that could lead to IPL (Interview 12). The nurse indicated that hierarchies were detrimentally associated with networking, and explained this level of communication, where collaboration could lead to exchanging ideas, may occur at 'higher levels' but did not happen at lower levels in the hierarchy.

The nature of collaboration in critical care that could lead to IPL was influenced by the openness and professional networking opportunities. Other features also contributed to collaborative practice in critical care, and relationship attributes (the next subtheme discussed) capture the complexities of collaborative IPL.

7.4.3 Relationship Attributes

Building interprofessional relationships was associated with collaborative IPL and numerous relationship attributes reinforced this process. Rapport fostered relationships and was built on a foundation of supportive holistic interprofessional interactions, strengthened by having trust, mutual respect, manners and showing gratitude.

Many examples of intraprofessional and interprofessional support were observed. Nurses were often at the heart of these positive interprofessional relationships, and rapport was apparent between the nurse and each profession. However, excluding the nurse, relationships between other staff groups appeared tenuous and less distinct.

With time, nurses and doctors developed a mutual appreciation of their roles caring for critically ill patients, which manifested through supportive behaviour. For example, one doctor was observed regularly helping nurses with their clinical tasks, and levels of rapport were reflective of the long working relationship between this doctor and the nurses (Field Note 10). Doctors supported nurses with clinical decision-making and with extended skill development. A nurse commended the consultants for being a “good team”, that “get on really well with the nurses” creating a “nice group dynamic” in the unit (Interview 4). This nurse reflected on a time she was working as a CCOT practitioner, had reached her limit of competence, and sought out the critical care consultant to assist with a deteriorating patient on the ward. The consultant immediately assisted her, defending her actions to the ward staff who were presenting resistance to the new service. An ACCP was also supported by a consultant whilst developing her vascular catheter insertion skills (Interview 5). The consultant attempted to discretely observe the procedure from the doorway but had been seen; the ACCP interpreted the presence as supportive, and humour was used to state he had been seen by the door “willing her on” (Field Note 2).

Nurses also supported doctors. One junior doctor reflected on his experience of first working in critical care; he shared feelings of being overwhelmed and described learning from a nurse how to escalate patient care following a ‘gut feeling’ (Interview 20). The nurse support offered a level of protection and gave him confidence that the team would support him when caring for critically ill patients. Therapeutic relationships formed from such situations and staff learned through collaborative IPL.

HCAAs built rapport with many professions. A nurse emphasised how keen HCAAs were as a group to learn and to become research active (Interview 4). HCAAs considered learning as vital to critical care and they were recognised as essential sources of knowledge for other professions with regards to equipment use. An ACCP, with his arm around the HCAAs shoulder as a show of professional rapport and respect, proudly announced that the HCA had taught him everything he knew, thereby showcasing supportive collaborative IPL (Field Note 2).

Physiotherapists valued critical care nurses for their support in the environment. They claimed nurses gave them reassurance and confidence, which helped with IPL engagement and defined roles in the environment. One physiotherapist emphasised that in critical care having a “really good nurse” close by made “an enormous difference” (Interview 14). Physiotherapists were motivated to form therapeutic rapport with nurses to receive sufficient information about patients’ conditions. Nurses also needed to be confident enough to work with physiotherapy treatment regimes, to optimise patients’ recovery, whilst maintaining safe parameters in terms of their stability and critical illness. The nurses’ specialist knowledge needed to be shared to ensure that the physiotherapist worked safely within the patients’ limits, maximising the effectiveness of interventions, and creating a therapeutic working relationship which was founded upon profession-specific knowledge shared through IPL.

Therapeutic relationships were based on reciprocal connections between professionals. One doctor proposed interprofessional relationships are needed to teach, to have mutual learning (Interview 3). A nurse supported this, explaining if a person felt supported, they could support others, creating favourable conditions for IPL (Interview

10). The behaviour of staff within the team influenced levels of support, and nurses linked support levels to whether colleagues created calm or chaos by their behaviour. The collaborative nature of working and learning in critical care was linked to the awareness of colleagues' stress. Trying to help as much as possible, within the realms of each professional role, was the goal of interprofessional support. Each professions contribution to patient care that could lead to IPL was valued:

“So just respecting each other as people, and the fact that we are professionals as well, deserves respect. So it’s just being polite, just taking care of each other.”

Interview 4 Nurse

Findings showed, however, that staff inconsistently recognised when professions needed help. Staff often used their initiative and offered assistance, but there were times when staff had limited awareness of when peer support was needed. Interprofessional support increased IPL opportunity, and lack of recognition in the team usually resulted in a lack of contribution; for example, junior doctors were observed not supporting team members with a patient X-ray, and inequitable provision of support could create tension (Field Note 8). Interprofessional tension was acknowledged on occasions when nurses felt they gave more support to doctors than they received, and learning opportunities were missed (Interview 10).

Poor therapeutic relationships between doctors and nurses could also result in intraprofessional solidarity. For example, when nurses were placed in uncomfortable positions with patient care, they would seek out their professional peers for support and intraprofessional cohesiveness would transpire to create a united front against the opposing professional perceived to be creating the challenge. In essence, professions would group together if they felt threatened and IPL became unlikely.

Critical care staff were supported with sympathy and emotional support. Sympathy for newer staff to the environment was particularly noticeable. The speciality of the clinical area was recognised by the team, and staff often reflected on their previous feelings and learning experiences as their skills developed. Nurses described lost confidence as they had “come from the ward to a different world”, and that the complexity of critical care could lead to feeling overwhelmed (Interview 12). Critical care was emotionally demanding, and, during one field visit, a nurse was observed giving emotional support to another nurse in the break room because their patient had just died (Field Note 14). The importance of building rapport with staff, so that support could be offered through any stressful periods, was emphasised by a nursing sister (Interview 4). Whilst transitions into new roles could be daunting, the constant support of another nurse to aid learning was described as ‘reassuring’ (Field Note 3). An area of practice highly regarded by nurses and HCAs alike for learning and skill development, was the provision of supernumerary status. A period of supernumerary time of between four to eight weeks was safeguarded for new staff. Offering this intensive level of support was appealing to participants, and critical care was described as having a supportive IPL culture.

Showing gratitude, respect and having manners, influenced the ways that staff worked and learned together. These facets of daily critical care practice were easy to observe and were widely linked by participants to building interprofessional relationships and promoting collaborative IPL. Interprofessional respect was reportedly earned by being open, accessible, and demonstrating levels of knowledge and competence.

When staff gave support, this would usually lead to expressions of gratitude. Gratitude was demonstrated with verbal phrases of thanks, or even ‘high-fives’ on some occasions, and it was often coupled with reciprocal offers of support. An HCA supported this observation by explaining that although he frequently helped nurses, he was happy to do so, because the nurses’ gratitude showed appreciation (Interview 8). Displays of gratitude encouraged collaborative working, further increasing IPL. There was an expectation that the interprofessional interactions and supportive collaborative working that could lead to IPL required manners. Staff seemed offended in the absence of this, and this presented a barrier to building therapeutic relationships. Gratitude was therefore a desirable relationship attribute and participants explained the benefits this created for collaborative working and learning.

Different professional groups were more adept at showing gratitude than others. One nurse was observed thanking individual staff for their contributions during a night shift (Field Note 2). The senior medical team were perceived to be less empathetic to the junior doctors’ experiences and were less aware of the need for increased positive feedback and gratitude; a doctor wanted consultants to show more gratitude for their contributions during shift (Interview 3). The doctor explained that good performance from junior doctors did not yield praise, unlike poor performance, which raised a negative response and was therefore negatively reinforced.

Gratitude was linked to motivation and staff morale. A nurse acknowledged a link between showing thanks and improving the learning environment:

“I try and make a point of saying thank you. ...maybe it could be a bit more ingrained within things. If it was a genuine thank you,

people would probably feel more valued and happier at work. ...creating a safe environment for somebody to feel like they can ask questions and they feel comfortable with you. You develop a rapport with that person.”

Interview 4 Nurse

Demonstrations of gratitude and manners also marked professional respect, and without respect, IPL was challenging. A doctor explained that giving respect often yielded increased respect from others and work became ‘easy and smooth’, ‘productivity’ increased, and the team worked together faster to respond to deteriorating patients (Interview 13). Respect was achieved through interprofessional dialogues, and a physiotherapist believed that feeling heard and valued by interprofessional colleagues made a ‘massive difference’ to feeling part of the critical care team which was linked to IPL (Interview 15).

Respect and manners improved the learning environment, and this relationship was voiced by many participants. A consultant indicated a relationship between respect and IPL, where the level of IPL was dependent upon how much colleagues were respected and trusted (Interview 17). The critical care team perceived mutual respect as a relationship attribute and an influential factor of IPL, this was attributed to knowing people better and how they worked. A nurse’s portrayal of the relationship between respect and IPL can be seen below:

“Mutual respect and gratitude builds a team and if you work together and respect each other better as a team, that’s got to provide learning opportunities, simply from the fact that you’re more comfortable with each other.”

Interview 10 Nurse

Interprofessional trust was fundamental to build working relationships to promote collaborative IPL, but trust took time to develop. A lead physiotherapist explained that initially she was watched by others, particularly consultants (Interview 14). She noted that, when a level of trust had been established, staff began ‘withdrawing’ during treatments, and members of the physiotherapy team were consulted for advice about patient care which had not occurred before. In this instance, gained over time, trust promoted collaborative interprofessional working and learning, as knowledge was shared between professionals. Conversely, an HCA suggested that working relationships based on trust could be developed quickly in critical care when the team is ‘welcoming’ and trust increased staff confidence to approach each other and ask questions to learn (Interview 8). A physiotherapist advocated that a pleasant and polite approach “got a lot more out of people” visiting the unit, than those who were “abrupt and rude and mean” (Interview 16). It was considered easier to learn interprofessionally when people were approachable and open.

Participants perceived the care given to critically ill patients a reflection of the people working within the team, and trust was fundamental to form interprofessional working relationships that promoted collaborative IPL. Effectively building interprofessional relationships generated a rapport, which created a sense of team spirit, thereby constructing a CoP within critical care which is the next theme discussed.

7.5 *Community of Practice*

Critical care was a complex CoP; the speciality of complex care and daily demands placed upon staff defined the boundaries of the critical care team. The sense of having a team spirit, high morale and belonging to a team was illustrated by participants

through socialising, and through commonalities and shared values of providing holistic PCC. Having a sense of shared identity and adopting shared language was instrumental in facilitating IPL, and professional perspectives differed regarding the team as a work family.

7.5.1 Socialising

Socialisation processes were heavily embedded in all of the critical care units studied and the critical care landscape was dominated by social interactions which encouraged IPL. The term socialisation is constructed in this thesis to illustrate how staff learnt to share personal experiences with each other, refining the critical care team. In between the professional aspects of work, staff took time to talk to each other and to share personal information about themselves and their lives outside of work. These ‘social chats’ were informal and often sporadic, and were moments where different professionals made friendly connections, developing a sense of belonging to the team and reinforcing the teams shared identity and purpose.

‘Social chats’ between staff consisted of topics such as pending marriages, pregnancies and family life events. When asked to consider the influence these conversations could have in terms of IPL, one consultant contemplated whether it was the social interaction itself that directly played a role in IPL, or whether it was the relationship between people that is reflected in the social interaction (Interview 17). He continued to explain:

“So, if there is a lot of social interaction, in a positive sense, then I would expect their learning is probably better, because people are more likely to take things in, and also more likely to feel empowered to ask questions. And if they don’t understand something, they feel more confident in asking ‘well why is it like this?’ if they have this personal relationship. If there is no

personal relationship, it is very distant, very formal, and then very hierarchical.”

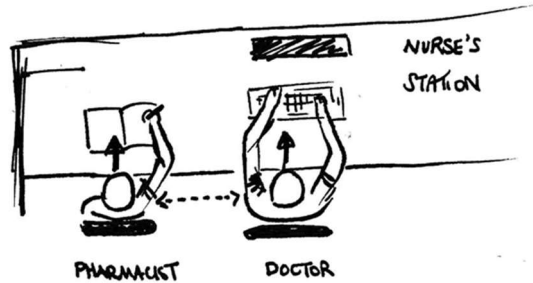
Interview 17 Doctor

The influence of socialisation on staff morale, collaboration and IPL was explored. Participants revealed that socialising was part of being human (discussed in section 8.3 *Being Human*) and fostered an open collaborative critical care unit. When staff morale was high and the team collaboratively worked towards the same goal, they would share knowledge through IPL. A strong sense of identity was present; this shaped the CoP, and the IPL culture was enriched when staff socialised together.

Socialisation occurred on the units; interspersed throughout daily activities, and outside, for example, on nights out. A nurse noticed as a consequence people showed concern for each other and formed a ‘good relationship’ across the interprofessional team (Interview 5). An HCA provided examples of nurse socialisation; wherein nurses would ‘congregate’ in the unit, having social discussions not clinically focused when patients were stable (Interview 9). A fieldwork observation (shown below) captured socialisation between a pharmacist and a doctor. They engaged in a ‘sideways’ discussion about exercise, with their heads down, and focused on writing patient notes.

PHARMACIST & DR : RAPPORT BUILDING

~ eyes forwards on paper & PC
but chatting sideways
~ talking about running & exercise
whilst working



NB: Artefacts, cluster points, proximity
visibility, socialising, familiarity.

Field Note 2: The pharmacist and doctor rapport and sideways discussion

There were many moments where staff would socialise, as they undertook their professional roles and as they worked to get to know each other in the CoP. Socialising reinforced collaborative IPL and built therapeutic interprofessional relationships that facilitated IPL. Professional visitors would join critical care staff for coffees and conversation. This was particularly apparent in the unit that had a designated meeting area on the corridor that promoted IPC. A doctor claimed that several benefits arose from the socialisation of critical care staff (Interview 3). These included: offering opportunities to learn through asking questions, engaging in professional discussions, and learning individual styles and approaches by getting to know colleagues' thoughts and behaviour.

Hierarchy was indicated as an influential factor affecting socialising and collaboration in critical care. One nurse described their relationship with consultants as strictly professional, founded on respect of their knowledge and commitment; it was not a

social relationship akin to other junior members in the team (Interview 7). Similarly, a doctor felt they had “more of a relationship with junior doctors” than with consultants; this was linked to limited time working together, to consultants’ age and to limited time spent during social situations, such as breaks (Interview 20). Socialising facilitated working relationships between staff and created opportunities for collaborative IPL, building the cohesiveness of the team and strengthening the CoP.

7.5.2 Commonality

The concept of a cohesive interprofessional team with commonalities was explored, and most participants felt they were part of a collective team. The critical care team had a shared identity, and individuals had integral roles within the environment, contributing to the sense of a CoP. When teams worked well together, this created a sense of belonging, and facilitated the development of team spirit and shared identity. Shared language was used to facilitate understanding of critical care practices and the team shared values of patient centred holistic care.

An HCA provided insight into the ways that the large critical care department retained its team spirit (Interview 8). He explained, despite staff not working together for long periods of time, “everybody works as a team to smoothly” run the unit because it was accepted a collaborative approach was needed. High team spirits created a welcoming atmosphere, and this was interpreted by another HCA as a display of kindness; this “made it easier” to access IPL opportunities (Interview 9). A physiotherapist offered a comparative view of the positive team spirit on critical care in contrast to hospital wards; closer interprofessional working relationships with medical staff reduced barriers, creating a more open IPL culture and a strong team spirit (Interview 22).

Shared identity within the CoP was generated by the nature of the caring role. An HCA explained they often stood back and watched the doctors and nurses, who were hands on, as they saved a patient's life. The CoP was shaped by the urgent collaboration needed to save patients' lives in emergencies. Therefore, the shared identity of the team was attributed to the clinical experiences that health professionals shared, working in the acute environment. These experiences created opportunities for collaborative IPL and created a tightly bound CoP.

One nurse suggested that the sense of being part of a team, with team spirit and a shared identity, fluctuated (Interview 10). She debated the merits of staff working in one place for a long time, recognising that long-standing relationships could enable very good team working. However, sometimes, interprofessional divisions could occur and the nurse claimed this could lead to a "them and us" situation. A consultant used the same terminology when asked about the nature of the critical care team (Interview 21). His hope was that when people came to work it was not a "them and us scenario", rather an effective interprofessional team. However, another nurse held an intraprofessional perception of team working in critical care (Interview 7). The impermanence of interprofessional team members, with medical and physiotherapy rotations, meant that nurses were the 'permanent fixture' in the unit and other professions would "come and go". This viewpoint insulated the critical care team to the nurses and HCAs and placed other professions on the periphery of the CoP, creating perceptual divisions in the configuration of the clinical team. Another perspective shared by a consultant suggested that the concept of the critical care team was sound, but there were also "teams within the team" (Interview 1). This

presentation of the critical care team suggested subcultures within the CoP and reflects the intricacies of interprofessional team constructions.

A nurse emphasised physiotherapists were not as integral to the critical care team as other professions due to their rotations and brief allocations to critical care, but as staff got to know them, their participation enhanced, creating increased IPL opportunity (Interview 12). A physiotherapist reflected on such improvements and explained that small practice changes had accumulated and improved the physiotherapists' integration into the team (Interview 6). Previously, physiotherapists had felt the 'least identity' within their critical care unit of all hospital areas, and their recent heightened sense of belonging to the team had arisen from the introduction of more touch points with other professionals, increased collaboration and prolonged time spent on the unit, enhancing IPL opportunities.

The CoP in critical care involved individuals with a shared sense of identity, working towards a common goal. Having team spirit and a shared identity contributed to the formation of a CoP in critical care, and with shared identity constructed by values of holistic PCC, staff collaboratively engaged in increased IPL opportunities.

Observations revealed interesting insight into the use of language within critical care. Members of the team had a deep mutual understanding of events, such as end of life care, which shaped the way that interprofessional staff worked and learnt together. The highly specialist nature of critical care meant that terminology could be technical, and this often resulted in 'insider' communication. Field notes reflected the level of jargon

and shared language used to describe patients' treatments. Interestingly, participants could be unaware of the use of shared language and terminology in critical care. It was an aspect of practice that many did not think of and as such, the presence of a shared critical care language was sometimes unrecognised by those working and learning together in the environment:

"I suppose you don't think about it [shared language in critical care]. ...it is important that we all know what each is talking about ...but I do think it's important because it makes the whole process of communication a little easier and a little more cohesive."

Interview 2 Physiotherapist

Despite varied recognition of shared language, the language affiliated with critical care working strengthened commonalities in the team, helping to develop a shared identity.

The critical care team as a CoP, shared the common goal of providing PCC that was safe and holistic. Interview discussions about IPL in the workplace readily led back to the patient as the focal point; critical care staff had compassion for their patients, and they worked to provide high quality care that was safe and holistic. Individuals continued to learn how to collaborate, to meet the individual needs of the critically ill patient. Observations confirmed that a common reason for staff learning interprofessionally, was to better care for the patient.

Collaborative IPL was only possible when staff worked well together. In order for different people to work together effectively, a doctor highlighted that the working environment needed staff, as human beings, to work towards the same goal, following rules of practice (Interview 13). Therefore, 'rules' and professional boundaries shaped

practice, philosophies of care that underpinned approaches and shared values created the culture and expectations of the critical care environment. The critical care CoP, which embodied shared values of holistic PCC, meant that staff were bound by and worked towards the same goals, regardless of their differences. This shared purpose united staff in their core goal of learning from each other for the benefit of patients. For holistic care to be given, interprofessional knowledge had to be combined. No single profession was believed to be able to give holistic care to meet the complex needs of the critically ill patient. Effective leadership, therefore, required an interprofessional approach, and IPL enabled a cohesive and collaborative approach to meet patients' complex needs.

To be a critical care practitioner that provided holistic care, knowledge was needed regarding the physical, emotional, psychological, spiritual, social and intellectual needs of the patient. Holistic IPL in this context is a construct that denotes profession's differing knowledge, and this knowledge can be pooled and tapped into when staff learn together, to collectively provide holistic care to patients. A nurse asserted:

"It is holistic, but it's holistic because it comes from all different professions, who have their own different component. ...I think there's not one of us could say "we are completely holistic and we've all got it right", but I think if you combine it all together, you probably do get a good spread of it (holistic knowledge and skills)."

Interview 5 Nurse

Participants believed that giving holistic care required a spread of professionals, interprofessional interactions were integral and holistic IPL had the potential to grow from this. Holistic care placed the patient at the centre, and in doing so, a

physiotherapist clearly articulated that it was the patient who was the priority in any collaborative IPL activity:

“...I’m very much patient focused. So, I do what I do, for my patient. Not to keep the nurses happy, not to keep the doctors happy, not to keep the rest of my team happy; I do it for my patients... It’s just that I think they are the priority.”

Interview 16 Physiotherapist

At times, the focus on patients’ well-being took precedence over discussions of the technical details of the patients’ treatment. The shared aspiration to promote PCC, therefore, could affect the depth of IPL and the knowledge shared. The senior physiotherapist’s comment below demonstrates an interprofessional dialogue, with intentional focus placed on the patient to achieve the shared vision of PCC, rather than focusing on IPL about equipment and ventilation methods:

“So, rather than going into the deepest darkest depths [with a nurse] about the amount of pressure support and the ventilation mode, and how much rest they’re going to get. I think it’s more about saying “if we do this, I think the patient will be rested enough, to do this” or “if we do this, I think the patient will be too tired to do this”.”

Interview 2 Physiotherapist

A core aspect of PCC was to keep patients safe, and this was promoted by opportunities to ask questions and to learn from others about the ‘technical aspects’ of critical care. One HCA revealed that, engaging in IPL resulted in a higher level of understanding about risks and this enabled safer practice for the patient (Interview 18). Thus, approaches to care that omitted detail and limited the depth of IPL, could present potential risks to patient safety. A balance was needed between the minutiae of learning about the technical details of critical care and the focus of care on the patient.

7.5.3 Professional Perspectives

Participants agreed the interprofessional critical care team had shared values of PCC, but their professional perspectives differed. A consultant explained that staff “perceive the patient through the prism of their speciality” (Interview 1). Differing perspectives resulted in different approaches to care. A physiotherapist conceived that if they collaborated with doctors during decision-making, their patient care plan had a broader scope of holistic treatment. They would consider how the physiotherapy interventions paired with the medical plans, and with insight into the underpinning rationale behind medical decisions, this would shape physiotherapist plans. Collaborative decision-making was associated with IPL and linked to holistic care improvements.

Findings indicated that professional groups had their own body of professional knowledge, and clinical goals and planned interventions for patients were profession specific. However, intraprofessional perspectives were recognised to differ. A doctor claimed that professional perspectives extended beyond speciality and reflected the interactions that occurred at different points in the patient illness (Interview 1). Subsequently, differing perspectives and goals for patient care only became apparent when professionals collaborated. Key to providing holistic PCC, was that professions learnt from each other about their differing perspectives, informing and enhancing their thoughts and behaviours through collaborative IPL.

7.5.4 The Work Family

There was the sense that the CoP in critical care could be considered as an extended work family; one HCA described this concept within their critical care unit:

“... I call our unit ‘a happy family’ because we all stick together. ...everybody gets along with each other. They bend over backwards to help each other if they can. ...Sometimes we have a bit of a joke around as well, we like to have a joke. ...it’s just they’re like brothers and sisters and mam’s and dad’s type family like. ...As soon as you walk in the door you’re welcome.”

Interview 9 HCA

The consideration shown between critical care staff extended across a range of professions. Whatever role people had, everyone was considered to be ‘like a family’ and would comfort and look after each other. Another HCA further explained that the feeling of being a ‘work family’ arose from the long time that people spent together in the unit (Interview 18). This was extremely different to the situation outside of work. Staff were quick to assert that their ‘work family’ did not extend into their personal life, which was described as separate. The aforementioned HCA additionally noted that the “little family and friends” in the critical care unit could naturally develop into cliques. This was perceived as an undesired characteristic of the critical care CoP because it could exclude people from interactions, and exclusions reduced IPL.

An exception to this perspective of the work family was expressed by one consultant, who appreciated the sense of belonging to a team, with a shared goal of PCC and a strong team spirit, however, the comparison of professional colleagues to family was not something this doctor agreed with:

“I don’t share that view. I think there’s a good team spirit and ward (number) ICCU is a big team. Not everyone knows everyone. ...So I don’t think I feel a family is applied to me in this case. ... In my view, that’s a bit of an outlier statement. We’re work colleagues and good colleagues, and I feel obviously by nature closer to the team of consultants than with the wider team, and I would imagine the senior nurses feel similarly, so they socialise you know as a group as well, and the physios

likewise, so I wouldn't overstate [that critical care staff are a work family] particularly like that."

Interview 1 Doctor

Interestingly, the consultant believed that viewing the critical care team as a family was an unusual perspective; an 'outlier' in the data. It transpired, the concept of a work family was shared across all research sites and was more widespread than the doctor realised. The construct of the critical care work family was not explored in depth due to the research focus on IPL, and the differing participant perspectives may be linked to preconceptions of the family unit, which extend beyond the scope of this research and could be explored in the future.

7.6 Disconnections

Circumstances that affected interactions in critical care, created disconnections that could detrimentally affect collaborative IPL. Tension, hierarchy, uniprofessional and intraprofessional working, and isolated practices all disconnected critical care staff from each other and presented barriers to IPL.

7.6.1 Tension

Interprofessional tension could be affected by leadership, internal and external pressures, team working, conflict, threats and patient safety. Critical care was acknowledged as a place containing "very different sorts of people", with some "difficult to approach" (Interview 13). This could lead to interprofessional avoidance, hence deterring collaboration and learning.

Tension was perceptible by the behaviour of staff in leadership roles. Observations revealed instances of interprofessional tension, and several examples were captured in field notes, and participants shed further light on these situations during interviews. One consultant was observed verbally taking out his frustrations on nurses by the bedside (Field Note 14). A NIC reprimanded a doctor for multitasking and talking to other people when there were jobs to be done (Field Note 18). A nurse commented on the irritation that doctors could experience when nurses asked questions to clarify information (Interview 19), and an HCA explained that usually jovial doctors would develop stern tones of voice when they ‘meant business’ and took the lead in tense situations (Interview 18). Of the examples of interprofessional tension observed, it was clear that their existence created dissonance with IPL.

Hierarchies were associated with tension, and one junior doctor believed that ‘flattening hierarchies’ facilitated IPL and collaborative working, helping staff to work and learn together without tension (Field Note 8). However, tension often arose from hierarchical situations; for example, the pursuit of safe practice was presented as the reason a consultant was abrupt with a junior doctor during a patient intubation procedure. An HCA explained that the consultant supervising an intubation abruptly intervened and took over the procedure, because the delay in successful intubation was moving towards unsafe levels for the patient (Interview 9). PCC remained the shared goal in the interaction; the doctor was fully focused on the patient care needs, rendering their communication abrupt and discourteous. The consultant assumed great accountability for the patients’ safety in the critical care unit they led, and tension could arise in situations where safety became compromised. Collaborative IPL in these

situations was overshadowed by the clinical demands of patients and interprofessional tension created barriers to learning, during and after interactions.

Power struggles were apparent, both inter and intraprofessionally, as numerous staff worked together caring for critically ill patients. This was noticeable during handovers, as those disseminating information were perceived to pass on responsibility of leading care to another leader. Loss of control or lack of participation in handover could represent a loss of power and hierarchical status in the team. This accounted for one fieldwork observation, when a senior nurse lost her temper because she had been excluded from the morning shift handover (Field Note 8). The critical care team reacted variably to this behaviour, and consequently, high levels of avoidance reduced the levels of IPL.

This observation highlighted that levels of IPL were susceptible to change from holistic factors in the unit. IPL was constructed as being part of a learning culture, which was entrenched, took longer to change, and was heavily influenced by organisational culture. However, IPL culture did not account for the unpredictable and detectable changes in IPL levels that occurred in response to influential and holistic factors in the critical care unit. IPL in critical care was affected by an IPL climate, fluctuating with changeable conditions and influential factors in the environment, such as the behaviour of people, environmental factors, and hierarchy.

Interprofessional conflict was often attributed to uneven workloads; for example, one field note captured disgruntled nurses recalling the events of a deteriorating patient

overnight (Field Note 5). The nurses expressed high levels of anger and dissatisfaction that the nurses had been ‘forced’ to lead the situation, because of the junior doctor’s reluctance to participate due to their ‘limited experience’. The nurses had to request that the doctor reviewed the patient’s condition and were unhappy that they had ‘bagged’ the patient during the intervention to support the patient’s breathing, while the doctor reportedly ‘just stood there’. Their greatest frustration was based upon the missed IPL opportunity for the doctor to ‘tap into’ the knowledge in the existing team, or have an open dialogue about their skills, thoughts, and learning needs.

There were occasions when nurses had been ‘nasty’ to junior doctors due to their inexperience. Times when doctors had disrespected nurses’ roles and logged them out of computers, leading to a loss of work. There were instances when differing professional perspectives had created tension whilst planning patient services, as individuals pushed their profession-specific agendas forward, without using the professional team to promote holistic approaches to care. The result of all of these examples, was a disconnection between staff and a poor atmosphere in critical care. A physiotherapist explained that, when people’s mannerisms were not “quite on point”, this led to avoidance of each other and reduced IPL (Interview 2). Participants linked working environments with tension and conflict to a poor atmosphere that resulted in poorer staff performance, avoidance, and limited IPL. Although one consultant postulated it was still possible to learn whilst being intimidated, although this learning was likely to be inhibited (Interview 1).

Operational pressures were highlighted by participants as contributory factors to interprofessional tension. Staff shortages, shift patterns, poor skill mixes, and patient

admissions were all acknowledged to cause tension in the critical care team. Additional threats could be perceived with new staff introducing novel ideas that cultivated change, and from professions with extended roles. These staff were met with resistance from those team members that felt their professional roles were under threat. For example, the shared value of holistic PCC could be obscured when nurses were seemingly threatened by the CCA role, which extended the role of the HCA and was feared by some to encroach on the nurse's remit (Interview 9). Nurses were reported as competing with CCAs to work with and support doctors during clinical procedures, in order to capitalise upon the praise and recognition that followed. Verbal feedback in this context was thought to reaffirm the interprofessional relationship between doctors and nurses and could reassert the nurse's ownership of their professional identity, as extended roles were being increasingly integrated into critical care teams.

A consultant shed light on professional tension and conflict in critical care:

"It must be detrimental to learning. It is detrimental to the whole performance of the whole team if things like that [interprofessional conflict] have happened. If the atmosphere is toxic, then every individual will perform far worse than they would otherwise do. They're far less likely to take anything on board. Because, if you're not open to receive in the toxic atmosphere, you will not open yourself up; you will try to protect yourself. ...So, I think if you shut it all out, then nothing will really reach you. ...with conflict and learning, the content [knowledge] is lost on the way and that is obviously a sad thing to happen."

Interview 17 Doctor

Interprofessional tension in critical care led to interprofessional avoidance, creating barriers to collaboration and IPL. Avoidant staff worked alone or within profession-specific groups and this influenced collaborative IPL in the environment. Perceptible

changes in IPL engagement indicated the presence of an IPL climate; and IPL was influenced by holistic influential factors in the critical care unit.

7.6.2 Uniprofessional Learning

Many occasions were observed where staff learned alone (uniprofessionally) or in homogenous professional groups (intraprofessionally). These practices prevented the collaborative interactions that could lead to IPL. Uniprofessional situations involved one professional, working, or learning in isolation, independent of others. Intraprofessional occasions occurred when multiple professionals, from the same profession worked or learned together, to the exclusion of other professionals.

Field notes captured shifts with limited interprofessional interactions because of isolated practices. Staff shortages were attributed to this because it changed the way that people moved within the environment. Nurses remained in close proximity to patients, and activity became overtly task orientated in nature, minimising interprofessional interactions. Such shifts had a strong focus on task completion, such as transferring patients to wards, and staff were hard to find because they were not circulating freely through the critical care units. Cubicles were also responsible for segregating people working in the environment, and the layout of critical care additionally influenced levels of uniprofessional learning (indicated in chapter 5: *Preface to the Findings* and chapter 6: *Embedding IPL*). At times working in cubicles was viewed positively, in that staff could 'get jobs done' but negatively when cubicles isolated colleagues and disconnected the team preventing IPL.

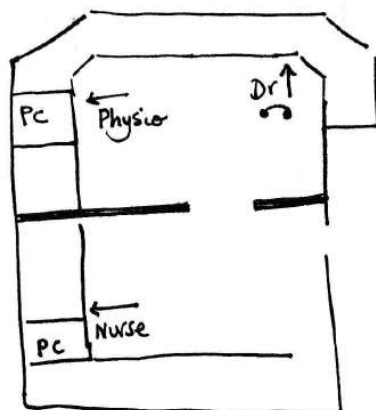
As a professional group, physiotherapists were very task orientated in approach and their autonomous role meant they would independently review patients and then leave the department, without any interprofessional contact. They were observed actively avoiding other professionals, especially during ward rounds, and their brief presence enabled them to visit other wards. Physiotherapist participation during ward rounds was limited across all research sites, and explained by workloads, time constraints, staff turnover and historical conflicts. As previously noted, physiotherapists were not usually bound to critical care specifically, and their intermittent presence in the unit was linked to their identity and role in the interprofessional team and the CoP.

Physiotherapists were valued for their input in decision-making. A consultant believed when physiotherapists were present that patient care improved from increased levels of information, “more educational talks” occurred and interprofessional knowledge was shared (Interview 17). However, a physiotherapist explained that doctors actively excluded them from decision-making, adopting a ‘consultant says’ approach to patient management that excluded physiotherapists from collaborating in patient care decisions (Interview 15). This was reportedly a source of conflict for some staff, who were used to a more inclusive approach to decision-making in critical care.

There could be a wide range of professionals present in the critical care environment at any given time; however, the presence of staff was not a direct reflection of levels of interprofessional working or learning; uniprofessional practices could continue despite an interprofessional presence. The field note image that follows, illustrates how several professions could occupy a space together and still not interact or learn with each other. In these circumstances, professions were often completing documentation,

either electronically or on paper, and were sat at the same desk. Without interactions, collaborative IPL was not possible. Occasionally, sideways conversations would occur as professions independently worked adjacent to each other. There were some instances when an interprofessional rapport and therapeutic relationship was apparent; yet IPL remained limited and unlikely because of the single-minded task focus that was adopted during uniprofessional working. The field note image below illustrates multi-professional isolated working:

'hub'
office observation



multiprofessional
isolated working

interprofessional
presence BUT
uniprofessional
approach

"14.50 I've been sat here for 10 minutes at the hub and the physio hasn't moved from the PC yet; typing patients' notes. The nurse in charge is in the back of the hub, a staff nurse has to be sought out by staff and gets up to answer the phone."

Field Note 18: Isolated multi-professional working

Intraprofessional learning excluded other professions and created interprofessional disconnections. Many rich intraprofessional learning discussions occurred between staff from the same professional group and were often observed with doctors; for example, senior doctors would regularly test and teach junior doctors, whilst inadvertently neglecting the learning needs of other professionals in attendance.

Intraprofessional decision-making between doctors was common with one-to-one or small group discussions, excluding nurses who were unaware of changes to patient care plans; creating another source of interprofessional tension that prevented IPL.

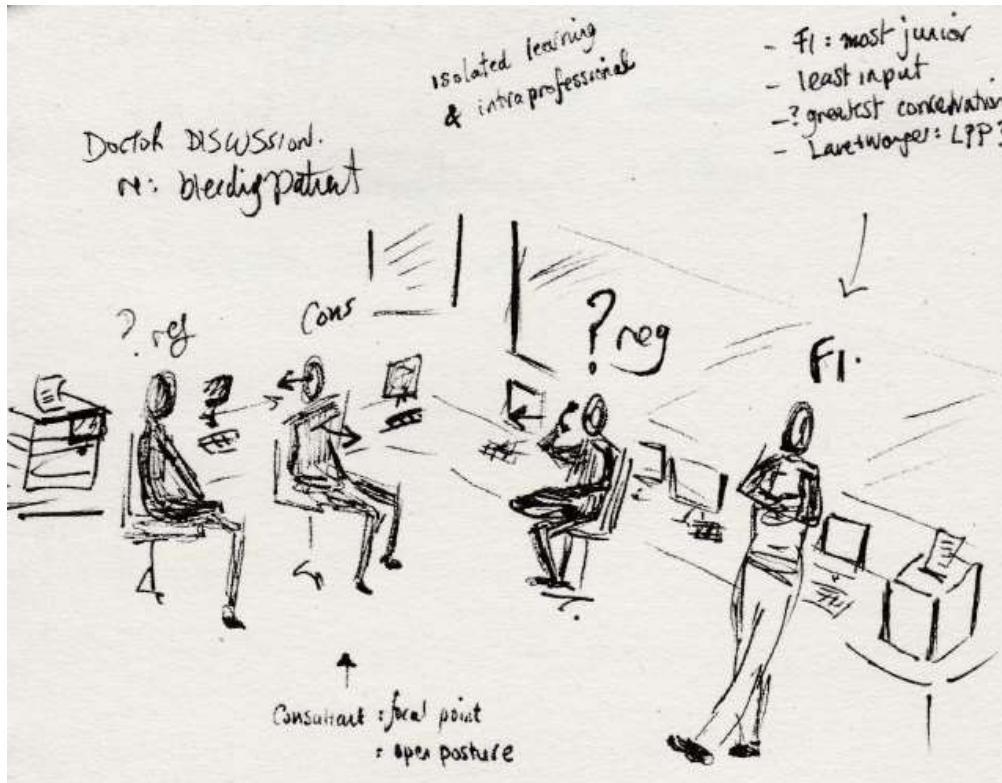
Uniprofessional decision-making was claimed to reduce collaboration and could detrimentally affect patient outcomes, especially if patient rehabilitation was delayed by excluding other professionals' input. A physiotherapist stated that IPC during decision-making was an opportunity to contribute to, and to learn the reasons behind decisions (Interview 16). This insight to the rationale underpinning decisions was perceived positively by participants and was not possible during uniprofessional practices; this further supports previous discussion in 6.4.1 *Learning from Others*.

Physiotherapists and doctors would often leave the immediate clinical area once their review of patients was completed. Intraprofessional learning therefore was intensified when staff left the unit and were no longer present in the environment. Nurses were often witnessed clustering in small groups discussing clinical cases and, as the only professional group working in the environment, IPL was not possible. Intraprofessional learning was frequently spontaneous and informal in nature. When staff clustered in areas away from the patient bedside, discussion would often lead to learning. The field note extract and image below captured a rich intraprofessional learning discussion between doctors, which occurred inside the central hub:

“The physio leaves after entering details onto a PC. I move into the hub and there is an isolated intraprofessional chat taking place with 4 doctors. The doctors are having a very comprehensive discussion about a patient case. They consider previous experiences, go through actions taken and discuss guidelines and evidence. This discussion goes on for about 15

minutes and they multi-task in between. The hub door is closed, and no other professionals are present to hear or contribute to discussions.”

Field Note 15



Field Note 15: Doctors isolated intraprofessional learning

7.7 Summary

This findings chapter has explored the overarching theme *Collaborative IPL* in critical care. The four themes have presented the ways that staff collaborate to learn together in the critical care environment. Findings showed that collaborative IPL is complex, and the intricacies of this phenomena are portrayed within the chapter subthemes. The therapeutic relationships formed between professionals affected engagement with IPL. Effective collaboration led to working environments conducive to people learning together, which promoted safe and effective patient care. Open and clear

communication fostered a learning culture that promoted IPL and, with a wide range of professions working in critical care, opportunities for IPL were plentiful.

IPL was influenced by professional role, leadership, and interprofessional presence on the unit in terms of staff visibility and proximity from others. Learning about others' roles in critical care improved communication and collaboration, and this increased the interprofessional dialogues that had the potential to lead to IPL. Leadership approaches influenced IPL engagement, in relation to role modelling and directing learning opportunities, and the visibility of staff was perceived to have greater significance for IPL than the proximity between staff.

IPC was possible during many activities and whenever professionals interacted with each other, and therapeutic relationships in critical care were built on a foundation of professional support. Interprofessional support consisted of showing people respect, gratitude and using manners during interactions. These facets contributed to mutual respect, which developed rapport and a team spirit within the critical care team. Collaboration was generally an overt practice and it was observed through helpful actions, sharing workloads, and offering colleagues support.

This ethnography presents critical care as a complex CoP. The boundaries of the team were defined by the acute care speciality and the professional identity of the staff within the team. Visiting professionals, such as physiotherapists, formed part of this CoP and the sense of belonging was reinforced if the team had a feeling of team spirit and high morale. Socialising was recognised as an integral part of creating bonds

between team members, and all staff had shared values of providing holistic PCC. Being part of a CoP fostered feelings of safety and belonging and extended to perceptions of the critical care team as a 'work family'.

Critical care IPL culture was not always positive; there were circumstances that could present challenges for collaborative IPL. Tension in the environment could result in interprofessional avoidance, whereby staff would avoid interactions that could have otherwise led to learning situations. Hierarchy within the staff structure could present barriers to learning if it impeded learning processes, and isolated practices prevented interprofessional interactions. Working unprofessionally as a lone practitioner, or working within homogenous intraprofessional groups, disconnected different professions from each other, and limited IPL opportunities. This chapter presents critical care as an interprofessionally populated CoP, where effective collaboration promotes IPL. Chapter eight, the final findings chapter, captures the context of being human in critical care, exploring the influence on IPL.

CHAPTER 8: HUMANISING IPL

The final overarching theme, *Humanising IPL*, emphasises the finding that healthcare professionals are people first. The nature of being human fortified IPL in adult critical care, recognising the influence that people within a system, such as the critical care unit, or an organisation, such as an NHS Trust, can have on the IPL culture and climate.

8.1 Chapter Overview

This chapter discusses two themes: *Being Human*, and *Human Behaviour*. Subthemes are used to further illustrate their relationship to IPL in critical care. Being human in adult critical care profoundly influenced the IPL climate. Participants used the term ‘being human’ as they explored how staff connected to the human elements of the complex care provided to critically ill patients and their families. This chapter begins with a discussion of what ‘being human’ means in critical care, in relation to making mistakes, showing personality, and making connections. Consideration is given to the ways practitioners shape the holistic nature of IPL through their ‘human behaviour’, in terms of emotions, using humour and being motivated for IPL.

8.2 *Visual Thematic Map of Findings*

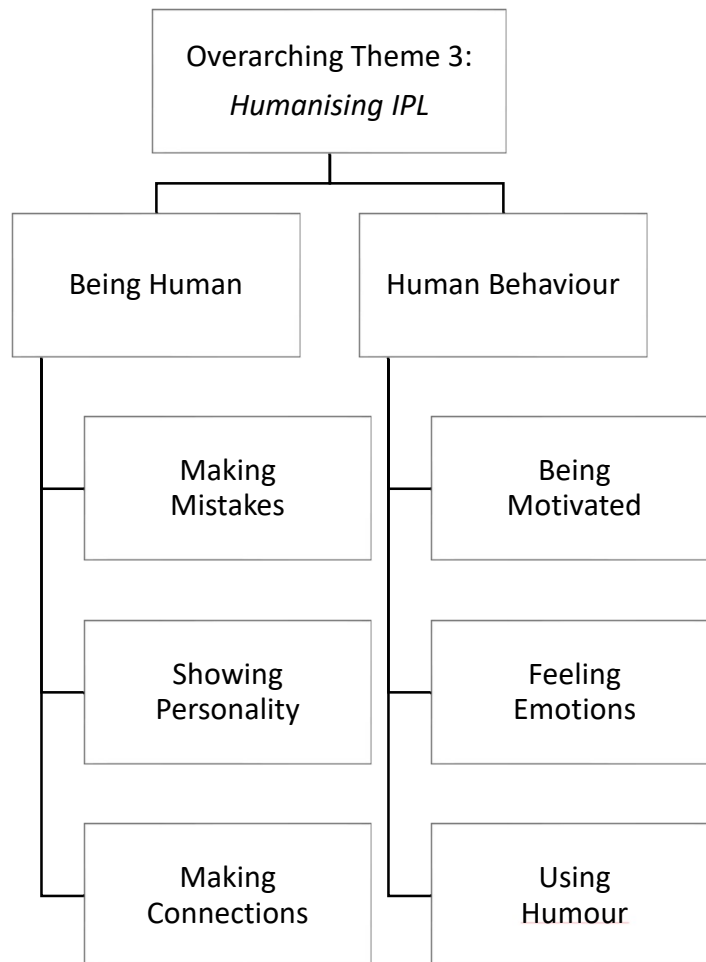


Figure 8.1 Visual thematic map of findings: Humanising IPL

8.3 *Being Human*

Participants acknowledged the influence of ‘being human’ in such an acute and technological environment. Recognition of the fragility and impermanence of life that critical care exposes, imposed a sense of reality and mortality. When people become critically ill, there is a realisation of the shared values and principles that being part of humankind involves. The threat of death, and the end of life, forces people to question what ‘being human’ really means, asking existential questions. In this acute

environment, the people working together embraced these principles, and ‘being human’ was integral to the overarching philosophy of care, influencing the IPL culture.

To be human is to be flawed; to make and learn from mistakes, to feel emotions and to grow, and to individually play a role within a wider community for a greater good. The intricacies of being human in critical care dominated the interplay between the people in the environment, and learning arising from these interactions was rich and meaningful to critical care daily practices. IPL was humanised by learning from errors, through reminiscence and the medium of storytelling to share experiences. IPL was humanised when staff showed personality, and connections between staff were strengthened as human characteristics were shared.

8.3.1 Making Mistakes

By virtue of being human, critical care staff made mistakes and clinical practice was reinforced by learning from these errors. Taking ownership of mistakes was widely advocated, and sharing experiences disseminated key learning points that arose from adverse events. The value of showing that people make mistakes because they are human, was explained by a nurse:

“...people realise that you are human and you make mistakes and everybody makes mistakes and ...certain people in our professional lives, we look up to and we hold on a pedestal and sometimes we don’t always see that they’ve made silly mistakes. ...But that allows you to engage a bit more with that person and share that experience on a different kind of level ...it’s a bit more personal.”

Interview 4 Nurse

This perspective positions senior staff as role models. As experts within their field, they became disaffiliated with human error as ‘silly’ past mistakes became obscured and obsolete. The nurse explained the initial pressure “to be perfect” was reframed through hearing stories from medical colleagues about their real experiences. Interprofessionally sharing experiences with others increased the engagement between them and developed professional practice and IPL in a more personable way.

A doctor emphasised ongoing recognition of mistakes was needed (Interview 13). Every year medical staff were formally appraised and were tasked with recalling and identifying their mistakes. The culture of learning from errors was indicated by the expectation that staff should have something to reflect upon as the doctor explained:

“...if you don’t put anything, that means there is something wrong. If you are working, you will get problems. If you are not working, you will not.”

Interview 13 Doctor

The value of learning lessons from each other, rather than learning directly through participation in adverse events, was preferred and encouraged, as the doctor indicated:

“So the important thing, is to basically keep positive and encourage others also to talk about it (mistakes). Because once you make mistakes yourself, you learn for life; and at least you will not make that mistake and you will pass that on to everybody and that’s the whole idea.”

Interview 13 Doctor

By showing the vulnerabilities of being human, such as making mistakes, others were able to empathise and learn together. For participants, being human meant to err and IPL potential was augmented by learning from others’ mistakes. One nurse used humour within her interprofessional teaching to reveal the errant human nature of

making mistakes; this approach humanised the learning, enabling colleagues to identify with the situation, interprofessionally sharing the lessons learnt (Interview 4).

8.3.2 Showing Personality

Understanding staff personalities informed the IPL culture. IPL was more likely to occur when staff showed their personality, and this is linked to building therapeutic relationships (discussed in section 7.4 *Building Relationships*). It took a “certain type” of person to work in critical care for any length of time (Interview 22). One nurse explained if staff showed their personality in critical care, it was viewed as a sign they felt ‘safe’ to do so, and this ‘opened up’ the environment, leading to learning which enriched the IPL culture:

“...with a safe environment; people are able to let go a little bit and show a bit of their normal personalities, rather than this totally professional façade. ...I think it opens out, opens the room up [for IPL].”

Interview 4 Nurse

The IPL culture was most effective when it was ‘safe’ to reveal personality traits. Knowing individual’s personality embraced the nature of ‘being human’ and was viewed as pivotal for IPL to happen. Another nurse suggested that different personalities resulted in different learning styles and approaches, further enriching the IPL culture (Interview 4). From a leadership perspective, knowing the personality of staff enabled purposive management of interprofessional interactions. A physiotherapist manager directed the team to different nurses in critical care, rather than being allocated to patients (Interview 14). The aim of this approach was “so that they get [interprofessional] relationships as well with the staff”. She argued that physiotherapists needed to be comfortable with nurses, but the nurses needed to have

confidence in the competence of the physiotherapy team. The manager believed that physiotherapists would gravitate towards their favourite nurses, for reasons of “safety, security and support”. This viewpoint emphasised that staff needed to learn about each other’s personalities, to make connections, to work well together and for IPL to occur.

8.3.3 Making Connections

For IPL to occur critical care staff needed to interact to create connections. Collaboration, discussed in chapter seven, can additionally be viewed from the vantage point of being human. To forge effective professional relationships, human connection was perceived as being primarily required. IPL was agreed as a potential product of this inter-collegial process and ‘being human’ was perceived to affect the professional relationships between staff in critical care. One doctor emphasised this claiming, regardless of profession, a key priority in critical care was to make a human connection first, so professional relationships and IPL could follow:

“With any human beings, whatever profession they are, you are always a human being first and then, you come back professional.”

Interview 13 Doctor

Seeing the human first in a situation humanised IPL, and subsequently, holistic care and IPL followed. The holistic elements of IPL meant that staff were learning about more than just the physical aspects of providing critical care. By embracing the situation of being human in a critical care environment, emotional IPL, which involved learning about emotions from others, added to the holistic approach of IPL.

The idea of staff being fallible, and therefore vulnerable within critical care, evoked a colloquial sense of belonging to humankind. This was encapsulated by a consultant, as he described the shared goal of critical care team members caring for critically ill patients and their families; he said:

“...we are just humans, looking after humans, and acting hopefully as humans with a degree of professionalism.”

Interview 21 Doctor

In such an intensive formidable environment, this facet of care was not lost amongst the complexities of the critical care speciality, but rather was a prominent feature. Being human in this environment was recognised as a fundamental characteristic of critical care, and IPL culture became holistic and humanised in response. The unpredictable and arbitrary context that different professions are bound by when working within critical care was captured poignantly by one doctor who simply stated:

“...because after all, we are human beings.”

Interview 13 Doctor

8.4 Human Behaviour

As humans, the way that people behaved within critical care further contributed to the holistic IPL culture. Motivation, emotions, and humour influenced this behaviour, shaping the IPL culture of critical care.

8.4.1 Being Motivated

Motivation to learn from others, whether intrinsic or extrinsic, fluctuated. Intrinsic motivation, where staff were inclined to engage in IPL for reasons known to them, included levels of interest, job satisfaction and a love of learning. Extrinsic motivation,

when staff intentions for IPL participation were affected by external factors, included personal circumstances, finances and career progression. To improve knowledge in a situation, it was felt that staff needed to be 'happy in their job'. The priorities of those unhappy in their work were said to become 'shifted' away from learning and towards shift completion. A nurse noted that:

"...morale is a big thing, because if you're not happy in your job, then your priorities are shifted completely and it might not be to improve your knowledge in that particular situation; it might actually be to just get through the shift, so it is important to look after those kind of psychological things as well."

Interview 4 Nurse

A consultant suggested that psychological attentiveness was necessary to improve the morale and motivation of the team members to improve participation in IPL (Interview 1). When staff members were happy in their job, they expressed a love of teaching and of learning that fuelled their individual motivation levels. One doctor explained that he loved to teach nurses, and their enthusiasm to learn in critical care was rewarding:

"Because they gain trust in you, because you know what you are talking about and it's always nice to give someone new information and skills, and they're really keen to learn in ITU, so it's quite rewarding."

Interview 3 Doctor

Critical care staff were well situated to care for people, as well as to learn from others. One nurse explained their individual motivation for IPL by acknowledging that the nursing role fit well with looking after people and learning (Interview 12). An HCA expressed a love of caring for patients and a love of learning; particularly about new things, and knowledge was sought from others through IPL (Interview 18). Similarly, a physiotherapist proclaimed that she loved learning new things and loved knowledge,

seeking this information from other professions (Interview 16). Her intrinsic motivation for IPL was coupled with an extrinsic expectation to learn as “part of the job”. Intrinsic motivation for IPL that arose from a ‘love of learning’ was noted across all the staff groups interviewed. Additionally, for HCAs, their desire to learn was particularly strong and was linked to future career aspirations to become a nurse.

HCAs frustrations with limited development opportunities, displaced their motivation for IPL and created negative feelings. In this situation, as an exception motivation for IPL was futile and purposeless. It had the potential to fragment the existing team, and the frustrated HCAs considered leaving critical care because their role had less opportunities and poor expectations to engage in IPL. For this particular staff group, having strong intrinsic motivation to engage in IPL was detrimental to their morale and knowledge development, if their motivation for IPL exceeded the opportunities available.

Personal interest in a subject influenced intrinsic motivation for IPL. If a subject was interesting, staff shared their knowledge with others. One nurse, returning from training, recalled openly encouraging her colleagues to attend because the focus of the training was ‘fascinating’ and had relevance to the setting (Interview 4). Knowledge was shared with more passion when motivation was higher, and a nurse explained:

“[that without interest] IPL is going to be half-hearted, it’s going to be cobbled together and that comes across in the work you put into it and the way you deliver [the information to others].”

Interview 12 Nurse

Participants valued knowing which team members were interested in specific topics, and this was beneficial to lead education and learning in specific areas. However, formal IPL opportunities did not always follow once individually interested team members were identified. Whilst staff members would offer to teach topics of interest, claiming that they were ‘happy’ to take the lead, oftentimes, beyond initial expressions of interest, learning and IPL would not progress (Interview 10).

Participants suggested that insufficient motivation to learn, particularly in depth, resulted in staff switching off and disengaging. One consultant indicated that you would “turn people off if all they wanted was an indication” or small insight into an area of knowledge, and too much depth was given (Interview 21). If IPL was only driven by people’s interest, it was suspected that some topics would never be learnt by the critical care team. A nurse deliberated:

“...you’ve got to have an interest ...but then there has got to be certain things that have to be covered and if nobody is interested in them, what are you going to do?”

Interview 12 Nurse

Personal interest was a driver for intrinsic motivation to engage with IPL; however, the presence of motivation was insufficient to facilitate IPL. The complexity of critical care and the expanse of knowledge needed, in addition to varying levels of engagement, made intrinsic motivation only one contributing factor to IPL.

Extrinsic motivation linked to improved patient safety as staff were motivated to learn from others to provide safe care. One nurse explained that learning with others was not always timely or possible within the moment it was needed (Interview 10). She

recalled occasions when no staff had been available to learn; giving examples of weekends or evenings when less interprofessional staff were present. In such circumstances when IPL was not possible, this nurse advocated a proactive approach. The extrinsic motivation for the nurse to engage in IPL was for contingency planning and preparatory practice for the future to promote the timeliness of care for critically ill patients. This nurse's 'comfort zone' was maintained by ensuring that knowledge was continuously sought from others, in anticipation of adverse events or situations which warranted a deeper knowledge base, when interprofessional team members might be unavailable for immediate support. Proactively engaging in IPL to gain knowledge in advance of isolated working, meant that contingency planning for patient care was possible. Therefore, proactively engaging in IPL enabled the nurse to be more prepared for emergencies. This increased knowledge base reduced the immediacy and reliance on others in the team, whilst still needing IPL to underpin the nurse's practice.

Extrinsic motivation for IPL was influenced by people's life outside of critical care.

One nurse acknowledged:

"...people have got their own lives; they've got things going on in their lives you don't know anything about and that definitely impacts on how you are in the workplace, so I would never judge anybody and think they're not interested ... I would always give somebody the benefit of the doubt ...and maybe that's all they can manage, coming to work, doing their job, keeping their head down."

Interview 10 Nurse

This empathetic acknowledgement was attributed to giving staff the 'benefit of the doubt' if they appeared disinterested in IPL, accounting for unknown life events. Some days the motivation to learn interprofessionally was overshadowed by a focus to do

their job. There was no additional capacity for IPL, and people became disinterested when their lives impacted upon their ability to function within the team.

The interest staff had in a topic influenced whether they would be approached for IPL. An individual's motivation and interest in a subject implied their receptiveness for IPL and staff approached colleagues who seemed interested in providing explanations and sharing knowledge. Extrinsic motivation for IPL in this situation was driven by the impression that approaching an interested colleague, with the intention of IPL, was easier because it was not felt to be an inconvenience. The inverse was also evident. If a person was not visibly interested in learning, the team member wishing to teach would disengage. Therefore, the perceived level of motivation and interest that someone showed, significantly affected IPL climate.

One consultant furthered this relationship by explaining that interests shape clinical practice, decision-making, and care by colouring one's view (Interview 1). When the interest and motivations of staff introduced new practices, increased IPL was needed, and the focus of care altered because new equipment and processes were initiated; staff needed IPL to learn new things. So, individuals' intrinsic interest influenced their extrinsic practice, affecting IPL culture, climate, and critical care practice.

Levels of interest and motivation varied, and it was possible to be passive. An ACCP claimed "not everybody is interested in learning all the time"; dismissive or disinterested attitudes created barriers to IPL, because disinterested attitudes precluded interactions that could lead to IPL (Interview 5). A consultant explored this further:

“...a more open body language...fosters communication and IPL in the same way it would foster communication ...It’s hard to keep going on in any conversation if the person you are talking to is disinterested in what you are saying. ...I don’t doubt that there are people taking stuff in, even though they appear that they are not.”

Interview 1 Doctor

Staff may appear disengaged from IPL and seem disinterested in interprofessional dialogue, but they could still learn and absorb information. Another doctor referred to passive IPL and stated that for some staff, merely being present in the environment could lead to IPL (Interview 13). Thus, LPP in the critical care environment could be enough to facilitate IPL. However, to engage in rich IPL, it was believed that staff had to be motivated and engaged in the learning process.

Individual expertise was thought to affect IPL engagement. When learning from others, years of practice were readily linked to the person’s knowledge base. An ACCP explained they had specialised quite soon after qualifying, and colleagues drew assumptions about limited competence (Interview 5). Therefore, negative judgements, made in relation to years of practice and expertise, presented a barrier to IPL.

Findings reinforced an expectation that learning was integral to the role of every critical care member, regardless of profession. One nurse claimed the essence of nursing is “learning in practice”, and in relation to CPD, career pathways influenced motivation for IPL (discussed in section 6.4.4 *Theory and Training*). Interprofessional educational opportunities are linked to career pathways and CPD, and doctors were associated with high levels of motivation, linked to the clearly defined stages of their

career development. One nurse suggested that doctors' "whole focus is on progression" and moving "up the ladder" (Interview 12). Nurses indicated less certainty for their careers, and they cited 'poor structure' and an absence of links between qualifications and career progression. HCAs showed that motivation to learn was linked to career development when they expressed desire to become nurses, and their motivation for IPL engagement was reflected in their deep-rooted conflict as they considered leaving the team to access learning opportunities. Physiotherapists did not vocalise their role in terms of career pathways; as autonomous practitioners, they had unique training that was delivered 'in-house' and career progression was not a topic that they conversed about openly as a group during observations.

Competency assessment and educational qualifications were another external driver that influenced motivation for IPL. A nurse explained the recent introduction of critical care competencies offered a way to standardise the wide variations of knowledge and ability within the nursing team and enhanced informal learning (Interview 10). However, one nurse noted the 'vast' number of competencies placed stress on staff (Interview 4). The National Competency Framework introduced by the Critical Care National Network Nurse Leads Forum (CC3N, 2015) was deemed to promote IPL opportunities, and standardised knowledge and skills; however, this created additional pressure for the critical care nurses undergoing them. Nurses already possessed a range of academic qualifications which were not necessarily affiliated with their role. Motivation for IPL was reduced for nurses when effort to gain knowledge and qualifications was not reflected in their career progression opportunities.

Finances were linked to extrinsic motivation. Higher salaries were mentioned by an HCA who aspired to be a nurse, although he emphasised that IPL motivation was ultimately driven by career progression. Another nurse identified the need for continuous learning to “move up the hierarchical structure” (Interview 12), but for nurses, promotions were inconsistently associated with academic achievement, so funding for CPD was difficult to obtain. Overall, the findings showed that motivation for IPL was influenced by intrinsic and extrinsic factors, largely determined by participant interest and opportunity to participate in IPL activities.

8.4.2 Feeling Emotions

Participants described the capricious and disconcerting nature of adult critical care work. As such, the emotional aspect of the role was undisputed, and a wide range of emotions were observed during fieldwork and described within discussions. Participants shared their experiences of feeling intense emotions, such as sadness, happiness, anger, and shock, and this led to staff becoming tearful and crying, laughing, or feeling overwhelmed. The intrinsic feelings that these individuals experienced, were noted to have extrinsic effects within the environment, as they were manifested through individual behaviour. Participants accepted that critical care was an emotionally charged environment. The intensity of the emotions experienced by staff were often hidden or redirected through their behaviour, with limited opportunity for formal emotional management. Thus, the effects on IPL were elucidated through lengthy discussion, to interpret ethnographic observations, and to check my assumptions about participant emotions.

There were occasions when staff had to leave the unit to cry and gather their thoughts. An HCA revealed several instances where he was upset that patients had died, explaining that “you do have a quiet moment, where you just walk away” (Interview 9). He also recalled primarily comforting an upset student nurse following an unsuccessful resuscitation attempt, and as time elapsed, he reflected on events and broke down into tears himself. He explained the delayed shock of the event had arisen because it was the first time he had witnessed the use of the defibrillator on a person, and the emotions emerged as he reflected on events. The HCA knew how to support other colleagues when they were upset, and he was later supported by a nurse, who showed kindness and support by talking to him. IPL in these circumstances extended to learning about emotions, and experiential skills were developed that enabled staff to emotionally support their peers within the critical care team. Holistic IPL was promoted when people learnt about emotions.

Empathy contributed to IPL and a doctor believed for upset staff members, learning could not begin unless they were offered empathy or support (Interview 13). Reassurance was needed primarily, so that staff did not feel guilty about their role within the situations that had upset them. Knowing the person and, specifically, understanding where someone was coming from, was believed to help this process of being empathetic to aid IPL.

In addition to individuals being emotionally affected by critical care work, participants explained that upsetting events could ‘dampen’ the atmosphere. Staff postulated that the IPL climate was affected by people’s feelings and emotions. Multiple examples were given by participants demonstrating that the behaviour of one or two individuals

in the environment could be responsible for altering the entire IPL climate. This range of emotional behaviours was observed during fieldwork, and the short-term effects on IPL were explored. The emotional behaviour of staff displayed during these examples extended beyond sadness and included expressions of irritation and anger. This was detrimental to interprofessional interactions and staff reacted with avoidance, which further deterred IPL opportunities (as noted in section 7.6.1 *Tension*).

One physiotherapist demonstrated the human behaviour of one person can have far-reaching effects on those working and learning in critical care (Interview 14). Being a visiting professional to critical care enabled physiotherapists to directly address behaviour, using humour to show overt avoidance. The physiotherapist articulated that once negative behaviour had been openly acknowledged, staff could then reflect upon and improve their behaviour for the benefit of the wider team. Staff temperament affected the IPL climate and deferred opportunities for IPL.

Expressing emotions affected IPL climate, and a consultant associated the extent of the influence on the hierarchy of individuals (Interview 17). Seniority was deemed to increase the intensity of the IPL climate change within the team:

“[IPL] climate is influenced to different degrees, by different individuals ... and those who are further up in the hierarchy, are more able to influence the current climate, particularly in the negative sense ... If the person who is ultimately in charge, so the consultant, if they are in a particularly bad mood, they will pull everybody down with them... if one of the healthcare support workers... was in a very terrible mood, they wouldn’t pull the whole team down with them. The consultant can actually do this. They can ruin it for everybody.”

Interview 17 Doctor

The emotional turmoil experienced within the team had the potential to detrimentally affect interprofessional engagement. In these instances, IPL was challenging, and, in some circumstances, IPL was inappropriate. The value of humanity, of humankind and of life, took precedence over learning as a focus during times such as these. However, what often materialised from these distressing experiences for staff were changes in their professional relationships. When staff supported each other through emotional experiences, professional relationships deepened, trust and respect often increased, and the sense of belonging to the CoP was reinforced. As a consequence of strengthened interprofessional connections, participants linked emotions with improvements in the frequency and depth of IPL.

Staff lacked preparation for managing emotions and observing others and sharing experiences were readily cited as the way staff learnt how to manage and process emotions in the absence of theoretical preparation. Emotional IPL was more often developed from experience, rather than through theory or education (Interview 22 Physiotherapist). A number of staff drew on their personal experiences of critical illness and bereavement to apply to the critical care environment, and a doctor reflected on the emotional learning he had done prior to working on critical care (Interview 20).

Learning about emotions in critical care was perceived as challenging, and staff described the need for balance between professionalism and compassion:

“...seeing relatives cry their eyes out, it just reminds me of what I’ve been through personally but you know, when you’re at work though, you’ve got to have the professional manner but obviously have the heart to care for those that are needed most.”

Interview 9 HCA

Doctors and nurses were perceived as the expert professions for effectively managing emotional situations; they were viewed by other staff groups to break bad news, to support family and loved ones through difficult times, and to do so professionally and compassionately. A physiotherapist perceived the role of nurses and doctors differently to his own with regards to managing emotional circumstances with patients and families (Interview 22). There was a sense of relief that his role largely precluded him from being embroiled in the upsetting elements of practice, particularly those that were affiliated with aspects of care such as end of life. Interestingly, this role differentiation was postulated to potentially reduce the level of emotional IPL possible between physiotherapists and critical care colleagues, because their role with patients differed in such circumstances.

Schwartz Rounds ® were of interest to one consultant in terms of IPL potential (Interview 1). Within this interprofessional forum, practitioners openly shared experiences from their caring roles that incited a range of emotions. The consultant discussed ways to further increase the educational value of Schwartz Rounds ®, deliberating whether increasing the ‘educational’ focus of the cases being reviewed was possible, whilst retaining the ‘structure’ and level of emotional ‘discussion’ that gave the process value. The Schwartz Rounds ® forum was interprofessional, and there was limited access to other interprofessional forums in critical care.

Consequently, with a perceived lack of theoretical preparation for emotional skills development, and limited formal opportunities for emotional IPL, staff informally sought support from each other within the clinical environment, often in response to

impromptu circumstances. An HCA supported this and identified a need to openly discuss emotions, which was integral to 'being human':

"No nurse is perfect, everybody's got their emotions as well. So, I think, obviously they have got the professional side but at the end of the day they're still a human. They've still got their emotions and I think it's nice when everybody talks about it, rather than just totally isolating yourself and thinking "jeez I've had a hard day but I can't talk to anybody about it"."

Interview 8 HCA

There were many instances where participants explained they concealed emotions; they would 'box them away'. One nurse gave insight into the emotional struggles:

"I don't like telling people the emotional struggles; what you go through as a nurse because I think that's private but sometimes it's nice to tell someone else in confidence and explain how you felt and ...sometimes it's really hard. There's just conflicts of interest and ...when you debrief with staff, there's always a different opinion. Sometimes you never come to a general consensus of what you think's right and sometimes you just reflect yourself... I like to come to work and when I go home, I like to just switch off. ...trying to box my emotions away and come back a stronger person. ...it's something I've learned from experienced staff ...I think it's just trying to find a happy balance."

Interview 19 Nurse

Staff appeared to have learnt to manage emotions through detachment; in part, this was to avoid burnout. Given the extensive likelihood that critically ill patients would not survive, members of the team who would regularly become upset or emotional were recognised to be at high risk of burnout. Avoidance and detachment from emotions had been learnt as a way to manage emotions in critical care for some.

As well as concealing emotions, critical care staff could disguise them. Humour and personality were strongly associated with how critical care staff learnt to manage their

emotions. The emotional IPL culture within critical care was therefore linked to ‘black humour’, illustrated in the extract below:

“Black humour, it’s part of boxing things away and dealing with them because, when you’re working with critically ill patients on a daily basis, you’re going to see a lot of death and, if you’re the type of person who is going to break down with tears every time that happens, how long can you do that job for? So you have to be able to be professional at the time, but you have to be able to take a step back, and the warped black humour is how you deal with that.”

Interview 22 Physiotherapist

Professionally and humanly embracing these emotions was a fundamental aspect of daily practices in critical care. Critical care was an emotionally charged environment for staff and emotional IPL enabled the team to learn together from experience, in the absence of, or to supplement theoretical preparation for managing emotions. Humour was often adopted to deflect emotions and helped to manage emotions in critical care.

8.4.3 Using Humour

Humour, related to emotions, shaped the holistic elements of learning together in this complex environment. The widespread use of humour within critical care daily practices was unanimously agreed by all participants during interviews and confirmed during fieldwork. Humour was a conduit to IPL and was a ‘sign’ of ‘happy’ professional working groups. When used within critical care, humour helped staff to cope; it created connections, developed rapport, and strengthened relationships between people working in the environment. Humour created a bridge to IPL by creating opportunities to interact and by forging secure relationships. Equally, IPL was useful to develop the skills needed to effectively use humour. Staff could learn how to use humour by learning from others, thereby engaging in IPL. The effective use of

humour seemed to improve staff morale, engagement with learning and overall job satisfaction.

Participants enjoyed recalling and reflecting on IPL interactions involving humour. This positive reaction intimated that humour is viewed beneficially within critical care. The relationship between humour and IPL was overlooked by participants, and when IPL was explicitly linked to humour, participants initially showed limited foresight that a relationship existed between them. Prior to interviews, staff had not considered the influence that humour could have on learning between professions. The role of humour in IPL and everyday critical care practice, seems largely unappreciated.

When probed, humour was perceived by staff to improve the openness of the environment, thereby creating a safer and friendlier atmosphere, which promoted collaboration and facilitated professional relationships. The participants related this more relaxed environment, to increasingly 'effective communication'. The resultant improvements to rapport and team working were also linked to increased levels of staff morale and satisfaction. Staff were simply happier when humour was used in the workplace. One consultant captured this, as he described how humour reflected the role satisfaction that was evident within the team:

"I think it's probably a sign of fairly healthy morale isn't it really? I'm sure you get that in any group, where you get people together who are happy in their work...it's a symptom of a healthy relationship between staff groups ... probably at its simplest level, it's not something done deliberately to achieve a goal, or a means to facilitate a separate objective of learning; it's probably just a sign of being at ease in each other's company and trying to get a job done."

Interview 1 Doctor

Another consultant surmised that for IPL, there is an expectation that humour would be beneficial to the team:

“For interprofessional learning, I would expect humour to be a good thing, because it opens up people, it makes you more receptive, creates a nicer atmosphere and therefore I think is easier for communication, for questions, to take things in.”

Interview 17 Doctor

Different team members learnt from each other when humour was used. Similarly, a physiotherapist, in the extract below, described how ‘important’ humour can be to the wider critical care team, and in doing so, explained how IPL could be humanised and the IPL culture enhanced:

“I think when the MDT have interaction, I think it’s [humour] really important, because it does make it more light-hearted and it does make people human and more approachable, and you have more chance to go and ask someone a question that you want to know more about, or you need to ask from a knowledge point of view, ... if you can have a joke with them and you feel happy doing that, [rather] than if someone was just straight faced and doesn’t crack a smile. So, I think it [humour] is really important, and it’s also really important in relationships if you can have a bit of banter when you’re working.”

Interview 6 Physiotherapist

Notably, humour, as a social trait, is intrinsic to ‘being human’. Participants made it clear that, because of the human elements involved in critical care practice, humour had to be applied respectfully and appropriately, to uphold professional behaviour and to minimise any associated risks during interpretation. The greatest concern for staff using humour was to misjudge the timing. In such a challenging healthcare environment, that could be both emotional and life-threatening; the team had to learn from each other how to be professionally humorous and how to balance the art of ‘being human’ with being professional, whilst placing the patient at the centre of care.

A consultant acknowledged this predicament, as indicated below:

“I think it’s that we’re all humans, and there’s a patient at the end of it, and ultimately that’s who we’re looking after. And if that were one of your relatives, I would hope that they would like to be looked after here. You can be professional, but out with those times you can have a bit of a laugh.”

Interview 21 Doctor

The practice of using humour within all the critical care departments studied mirrored these viewpoints; for example, one junior doctor warned:

“...you’ve got to get the context right, you’ve got to be cautious and ... [humour] has to be constantly professional ...so timing is important, the way we are doing that is also important.”

Interview 13 Doctor

Although humour was widely used, staff did not uniformly integrate humour in their work without forethought. Because humour is not without risk, and all potential risks were perceived to detrimentally affect IPL, humour was a highly selective activity. Participants varied their approach, engaging in a conscientious process of purposive selection, based largely upon expectations of their colleague’s reaction. On deciding who in the team to be humorous with, one doctor revealed he would only joke with staff he liked and that he thought would appreciate the use of humour (Interview 21). This cautious deliberation was perceived to improve collaboration, to optimise patient care and could enhance IPL, whilst avoiding offense, misunderstanding or errors. In essence, when humour was present, it humanised the critical care learning experience, and was found to be integral to the process of humanising IPL.

The environment embraced different types of humour, and these were applied at varying times and in differing situations. Humour could be ‘dark’, ‘black’ or ‘dry’, sarcastic, reminiscent, or empathetic. Reasons for using humour were multifarious,

and included being used as an icebreaker, diffusing heavy emotions, or sharing experiences.

Critical care communities often developed a ‘dark’ sense of wit. This was influential in shaping the professional identity of this CoP, as the dark humour was evident in social interactions, and it was believed to forge strong relationships between staff. Humour of this nature carried significant risks of being misconstrued, potentially leading to misunderstandings or communication errors. Participants expressed concern about this, but also acknowledged how dark humour supported relationships and IPL:

“I think with the NHS staff, 90% of us have a dark sense of humour. We find things funny that other people wouldn’t find quite so amusing... but I do think it probably does help. I think it definitely improves your relationships, which we’ve already said are important for learning.”

Interview 16 Physiotherapist

Consultants in particular, were concerned with sarcasm and this type of humour required the most accomplished skill set and was perceived to harbour the greatest risks. Consultants were preoccupied with getting the balance right, between ensuring that accurate information was communicated within the team, and that they did not cause any offense. They worried about being offensive or causing humiliation to others, if humour was misdirected or misconstrued, and as departmental leaders, they worried about the potential risks of people making mistakes or learning inaccurate information, if sarcasm was misconstrued. This dilemma was referred to by one consultant as ‘a two-edged sword’ and he warned when humour is sarcastic or ironic, “there is always the risk that someone takes it seriously and takes the wrong message home” (Interview 17). Therefore, sarcasm was viewed by consultants as a threat to accuracy and safe practice, and this could detrimentally affect the quality of any IPL.

Individuals could also experience adverse consequences with sarcasm, such as decreases in confidence, reductions in team working and disengagement from interactions that could have otherwise led to learning.

Reminiscing with humour was popular to facilitate IPL. Storytelling improved IPL participation fostering an open and dialectic culture, and it was believed to improve memory recall when drawn upon later in clinical practice. Knowledge and practice experiences were easier to remember when humour was a part of the IPL activity. One physiotherapist attested to this by explaining “funny stories back up learning” (Interview 16). So, sharing funny experiences within the team helped to make connections between people, it strengthened bonds, reduced risks associated with knowledge sharing that could arise from hierarchies or making mistakes, and it was viewed as a good way to show empathy or to give a moral to a story. A nurse explained how reminiscing about funny events and stories aided learning, making it memorable and it helped to remove the pressure often felt due to the seriousness of critical care and due to how much there was to learn (Interview 19). Funny stories were used by another nurse teaching others, and sharing experiences became integral to the teaching approach used, thereby humanising IPL (Interview 4).

When used well, critical care staff believed that humour helped them to cope with the extreme demands of their role. They valued humour in this context and explained that jokes could ‘deflect heavy emotions’ away, helping to compartmentalise negative thoughts and feelings, and with professional focus, learning was possible:

“If you can, it’s [humour] a bit of light relief. Sometimes you know working in a hospital isn’t nice. We see things that we

might not want to see, or that, leave you upset or sad. So I do think that humour is really important working in healthcare, and I think it probably aids learning indirectly.”

Interview 16 Physiotherapist

Examples were given where humour could be used by staff to channel and express distressing emotions, learning from each other how to exploit humour as a means of coping with stressful events:

“Yeah, obviously if we didn’t laugh we would cry ...It’s like at break time, you never hear the staff room quiet, someone’s always laughing or someone’s always joking on or having a joke about this. Night shift banter is the best.”

Interview 8 HCA

Participants further reflected upon the effects that sharing stressful experiences had on humour and IPL. Humour had the potential to give all staff ‘something in common’ with each other. One consultant explained that humour could:

“...bring everybody down to a base level, and it just dispels this hierarchical system that people associate with doctors and nurses and allied professionals.”

Interview 21 Doctor

This ‘common ground’ humanised situations and highlighted the shared focus of PCC. In doing so, it removed communication barriers, rebalanced hierarchies and improved the collaboration considered key for IPL. Through discussion, it became apparent that humour could be highly regarded as a means of improving IPL levels.

Humour could be used as a communication tool, giving staff a voice, and enabling less guarded communication between professionals. Humour promoted a relaxed open culture embracing transparent conversations about patient care and encouraged

interprofessional interactions. A nurse emphasised the value of humour and believed it was “good for breaking the ice”, it eased tension and relaxed people, preparing them for engagement (Interview 4). This led to collaborative problem solving and established interprofessional rapport, which created a climate favourable for IPL.

The level of staff engagement with humour reflected their confidence to make jokes, and to ask questions. In critical care, humour was often affiliated with certain individuals, when peer expectations had essentially labelled them as ‘funny’ colleagues. This label presented funny staff as “more approachable and easier to learn from” (Interview 6). This field note demonstrates how the ‘funny’ team member could enhance IPL:

“During a ward round, the consultant explained: The patient has “the square root of bugger all”. Description used to state their low level of platelets. This was a very humorous way of explaining contextually just how low the platelet count was in this instance.”

Field Note 3

People that were funny were more approachable, interprofessional interactions were more common and staff explained this made them feel safe to ask questions and to learn together. This was evident during one field visit, when I was directed by a nurse to observe the ‘funny consultant’, rather than the other one on shift who had already expressed his dissatisfaction with my presence. In such circumstances, humour provided professional intimacy, presented opportunities for IPL within an open discursive culture, and generated a sense of security within the team:

“There’s one consultant that I’m thinking of in particular, where you always feel like you’re going to have a laugh and it’s not that he isn’t doing his job, but you will always have a laugh on the ward round or if you’re going to see a patient with him. It’s

just how he is, and actually I find talking to him no bother at all. ...it kind of just builds a relationship with him. You've got more of a rapport and you feel a bit more comfortable with him. I think, if you can laugh, and have a little bit of a joke with someone, you're showing them that actually you're being open with them."

Interview 20 Doctor

Whilst higher levels of humour were associated with an open and relaxed atmosphere with the potential for rich IPL, it was suggested an absence of humour created tension. A junior doctor thought that in situations where staff are serious and avoid humour there can be 'friction', but humour could 'break it up' (Interview 20). Humour was useful to relieve tension and many staff alluded to this during discussions. A physiotherapist noticed that 'good banter' relieved tension when caring for critically ill patients or if staff were 'moody' (Interview 14). A doctor noted being able to laugh with the team overcame 'stuffiness' and hierarchy in the ward round (Interview 20).

Humour was a prevalent and time consuming activity, heavily utilised, within a time sensitive clinical environment. Benefits were widely acknowledged by those using humour in critical care, but the time invested in this activity was never contemplated by participants. Humour, when viewed as a time-filler, appeared to serve several purposes. People worked together more cohesively, and this promoted learning together. Humour provided a pause in social interactions; it acted as a buffer and offered a form of respite within which situations could be evaluated and reframed. Viewed from this perspective suggests that humour offers cognitive respite during IPL. Critical care staff were unconsciously using humour in their busy day to find space to think. Collaborative decision-making was more evident as interactions between staff increased, and the wider critical care team appeared more receptive to the idea of

learning together. This indicated that humour influenced the readiness and receptiveness for IPL within the adult critical care environment.

Complex patient care demands extensive teamwork, so interprofessional visitors to critical care were commonplace. Interprofessional visitors appeared to benefit from a positive IPL culture that embraced humour and physiotherapists could be visitors when their presence was transitional in the unit. Humour improved the atmosphere and visiting staff stayed longer, interacted more, asked more questions, and worked with increased involvement, promoting IPL opportunities:

“I mean it (laughter) lifts the atmosphere, it makes a nice working environment, it makes people who aren’t always there think that actually, when I’m there, I have quite a nice time. So it doesn’t make people resistant to going back [on a return visit] or wanting to get off [to leave the department] as quick as possible.”

Interview 15 Physiotherapist

A complex relationship between humour and IPL was evident, where each strongly influenced the other. Humour in critical care facilitated IPL and made the environment more receptive to IPL. It was seen to positively influence collaboration, increasing the confidence of professions to interact, thus promoting an IPL culture that opened communication. Inversely, IPL interactions further developed humour. Staff gained knowledge from each other through interprofessional activity and developed their professional knowledge and skills to successfully apply humour to the context of critical care. From these insights, it can be postulated that effective use of humour can bridge the potential between interprofessional working and IPL within critical care, acting as a conduit. Essentially, critical care communities learned better together when humour was present.

8.5 *Summary*

The final overarching theme, *Humanising IPL*, extends beyond recognising opportunities to embed IPL into the critical care learning culture that were discussed in chapter six, and furthers discussion of collaborative IPL discussed in chapter seven. Insight is given to the intricacies of IPL, and staff shaped the holistic IPL culture when they connected with the human features of critical care. Humanising IPL was possible when staff learnt from mistakes, showed personality, and made human connections. Human behaviour, indicated through emotions, humour and motivation, influenced the IPL climate and, humanising IPL within critical care promoted IPL. The discussion chapter which follows, considers the uniqueness of findings, and situates them within existing literature. Implications of the research are proposed, and strengths and limitations of the research are considered.

CHAPTER 9: DISCUSSION

9.1 Introduction

This discussion chapter begins with a synopsis of overall findings. It proceeds to highlight the original contribution to knowledge and situates analysed findings within current literature. This chapter addresses the research aims and question in the study. Implications of the research findings for IPL in adult critical care are considered in relation to practice, policy and education. Strengths and limitations of the research bring the chapter to a close.

9.2 A Synopsis of the Overall Findings

In this thesis, rich ethnographic findings provide insight to the IPL culture of adult critical care. The research focus resides at the intersection of literature concerned with interprofessional practice, IPL, and adult critical care, and despite recent interest in interprofessional ethnography, no research with this specific focus has been undertaken providing an original contribution to knowledge. The research aims were to develop a rich description of IPL culture in adult critical care, to gain insight into participants' experiences and perspectives, and to understand factors which promoted or inhibited IPL. The overarching research question sought to explore the influences that affect IPL culture in adult critical care. Figure 5.2 presented previously, maps the complex thematically analysed findings that are presented in the thesis, and details the central organising concepts associated with each of the three overarching themes.

The findings show the adult critical care environment, regardless of size or structure, is a knowledge dense environment with potential for rich IPL and IPL occurred in all critical care environments studied. However, formal opportunities for IPL were limited

and IPL opportunities were often missed. The culture and changeable IPL climate influenced IPL opportunities. IPL culture was shaped by the organisation and teams, but also individuals in the environment, reflecting the conceptual framework discussed in section 3.3 *Conceptual Framework*. IPL culture was entrenched in daily critical care practices, it took longer to change and was heavily influenced by organisational culture and hierarchy. However, variability in IPL levels indicated a changeable holistic IPL climate, therefore IPL was affected by both the changeable climate and embedded culture, and these were affected by influential factors (table 9.1).

9.2.1 Influential Factors Affecting IPL in Adult Critical Care

The influential factors that affected IPL are shown in table 9.1 and were psychological, physical, emotional, spiritual, intellectual, or social in nature. Physically, the environment shaped interprofessional interactions that could lead to IPL, for example visibility of professions promoted IPL participation more than proximity, and each critical care area created spaces for IPL. The ways staff learned together varied with respect to rituals and routines of daily critical care practices. Building therapeutic relationships within the community of critical care practice provided insight to the social construction of knowledge through IPL. The shared goal and motivation for IPL was to achieve safe holistic PCC, through effective decision-making and high-quality care provision. However, the extent of knowledge sharing varied, and disconnections between professions created barriers to IPL, detrimentally affecting the IPL culture and climate. Critical care, viewed as complex, emotional and life-threatening, demanded staff to professionally adapt a holistic approach. IPL was humanised through humour, learning about emotions, and being human in critical care which influenced staff behaviour, and the intricacies of collaborating and learning together.

By meeting the research aims, the analysis of IPL in adult critical care recognised the features that enriched IPL culture, and those which created challenges, highlighting missed IPL opportunities. Table 9.1 addresses the research question and illustrates an overview of the influential factors found to affect IPL:

Table 9.1 Influential factors affecting IPL in adult critical care

Embedding IPL
Environmental conditions: temperature, space, light, and sound levels
Critical care layout
Zones of learning
Ways of learning
Assumptions regarding knowledge levels and learning from others
Levels of theory and training
Critical care practices and daily routines
Artefacts e.g., resources, technology, and workload demand
External drivers e.g., professional competencies and career pathways
Time available for IPL
Collaborative IPL
Interprofessional Presence: the visibility of and the proximity between staff
The skill mix and range of professional roles in the team
Leadership approaches and hierarchy
The openness of the atmosphere and how safe it is to ask questions
Opportunities for professional networking
Staff familiarity
The presence of role models
Levels of organisational and managerial support
CoP features e.g., socialising, shared values, professional perspectives
Tension and isolated working practices
Humanising IPL
Human aspects of critical care practice e.g., using humour, feeling emotions
Perceived levels of motivation for IPL

9.3 *Original Contribution to the Evidence Base*

The research context is unique in terms of the focus of the research on exploring IPL culture in adult critical care, the combination of staff groups interviewed in the adult critical care environment, the methodological approach taken to conduct a focused ethnography, and the uniqueness of the three research sites selected in the North East of England. The research findings contribute to a gap in current literature, and have potential transferability to practice, policy, and education. Several aspects of the findings uniquely contribute to the evidence base on IPL, as summarised below in figure 9.1, and these are discussed in this section. Findings which advance current literature are subsequently discussed in 9.4 *Situating Findings within Literature*.

The ethnographic findings provide an original contribution to knowledge from the following:

- Acknowledgement of a range of influential factors affecting IPL (table 9.1)
- Development of an IPL Conceptual Framework
- The key finding that IPL is affected by a changeable holistic climate
- Recognition of four stages of IPL
- Identification that knowledge differentials between staff affect IPL
- The finding that rationales enhance decision-making & IPL
- Development of the CAUSE decision-making model
- Recognition that holistic PCC is a driver for IPL in adult critical care
- Recognition of the extensive use and influence of humour with IPL
- Recognition of emotional IPL as intrinsic to holistic IPL in critical care
- The finding that visibility of staff is more important than proximity in a space
- Recognition that viewing the team as a ‘critical care family’ can enhance IPL
- Recognition that extended professional roles promote IPL
- Realisation that the IPL culture in adult critical care permeates from organisational leaders.

Figure 9.1 Original contribution to knowledge within the thesis

9.3.1 Conceptual Framework and Theoretical Perspectives

Whilst this focused ethnography is not underpinned by an a priori theoretical framework, nor is its intention to construct theories or models, the research findings inform the conceptual framework presented in section 3.3 *Conceptual Framework* and provide a theoretical perspective to view IPL culture. The exploratory nature of ethnography can be constrained by applying theoretical frameworks to research. Ethnographies are better suited to being ‘unhinged’ from strong theoretical frameworks, which can limit research if rigidly and dogmatically applied (Collins & Stockton, 2018). Analysis of the findings revealed hierarchical relationships between the levels of IPL within the conceptual framework. The IPL culture in critical care permeates from organisational leaders and this hierarchical insight offers a theoretical perspective to view IPL culture (illustrated in figure 9.2).

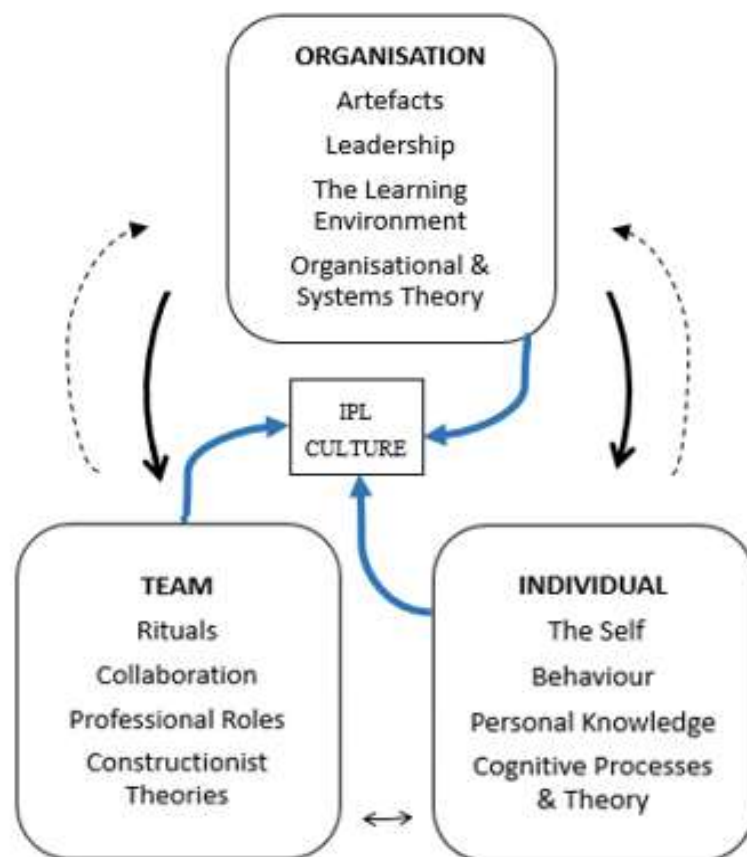


Figure 9.2 A theoretical perspective of IPL culture

The hierarchical relationships between levels of learning are represented by arrows in figure 9.2. Solid directional arrows denote the hierarchical influence that the organisation had on individuals and teams, who were presumed by participants to have less power, becoming less able to effect cultural change in critical care. Schein (2010) supports this observation, emphasising that leadership and culture are fundamentally interwoven, and leaders are the ‘architects’ of culture. In turn, the perceived minimal influence that individuals and teams could have on the organisation are represented by broken arrows. However, in the research, teams and individuals were observed to have similar influence on each other; an individual could influence the culture of a team, and the team could influence individuals within it. Findings showed that all aspects of the conceptual framework contributed to the IPL culture: this is depicted by arrows leading from all levels of learning to the central tenet of IPL culture. The perspective that Swanwick (2005) assumes reflects this overarching relationship, recognising that the individual learner shapes the team and the CoP they reside; the workplace becomes knowledge-producing and this is associated with successful organisations.

9.3.2 IPL Climate

IPL culture did not account for the unpredictable and detectable changes observed in levels of IPL during the ethnography. An IPL climate existed, fluctuating with changeable conditions and influential factors in the environment, such as the behaviour of people, environmental factors, and hierarchy. The behaviour of people in the environment affected interprofessional engagement that could lead to learning.

Staff postulated that the IPL climate was affected by people’s feelings and emotions, and human behaviour could include expressing emotions, using humour, and being

motivated. Multiple examples were given by participants demonstrating that the behaviour of one or two individuals in the environment could be responsible for altering the entire IPL climate in the unit. For example, staff temperament deterred and deferred opportunities for IPL. Expressing emotions affected the IPL climate, and participants' valued humour as an ice breaker, useful for easing tension and relaxing people, preparing them for interprofessional interactions. This could lead to collaborative problem solving and established interprofessional rapport, which created a climate favourable for IPL.

Being human in critical care profoundly influenced the IPL climate and humanising IPL to holistically meet the needs of the critical care team promoted IPL. The perceived level of motivation and interest that someone showed towards learning influenced IPL engagement and this affected the IPL climate, particularly when environmental factors such as workload and staff numbers affected the energy levels of the team. Whilst human behaviour and the environment influenced IPL climate, the hierarchy of individuals was also associated with the extent of influences on IPL. Seniority was deemed to increase the intensity of the IPL climate change within the team. This participant perspective is reflected with the theoretical perspective relating to the conceptual framework and reinforces the observation that hierarchy influence IPL culture and climate.

9.3.3 The Four Stages of IPL

The study indicated that staff learned in phases. Figure 9.3 depicts staff through four stages of IPL: preparing, enquiring, acting, and sharing.



Figure 9.3 The four stages of IPL

Prior to enquiring with others, participants engaged in independent learning to prepare themselves and to reduce their vulnerability in the second phase, as they raised awareness of knowledge gaps by enquiring and asking interprofessional questions. Huggins (2004) describes ‘self-directed learning’ as individuals’ attempts to fill gaps in their knowledge, where the depth of learning is contextually influenced, and individuals communicate and collaborate with other health disciplines to ascertain knowledge. Findings in this thesis showed that individuals independently prepared for IPL through documentation, and Boud and Middleton (2002) refer to an inclination to initially draw on documentary sources during first stages of learning. Acting involved observation and experiencing guided practice to learn from others; learning from others is discussed further in 9.4.1 *Physical Environmental Factors* relating to the overarching theme *Embedding IPL*. The final stage of IPL was sharing the knowledge gained from the process of learning from others, as staff consolidated and disseminated their knowledge through IPL.

9.3.4 Knowledge Differentials

Another unique finding related to knowledge sharing and knowledge differentials between staff. Unexpectedly, the less people knew, the less they were taught. The depth of knowledge shared was based on assumptions about existing knowledge and motivation to learn. During IPL moments, the depth of knowledge shared was

modified to meet presumed learning needs; as the difference between practitioners' experiences widened, the information shared became more condensed and simplified. IPL was consequently brief when knowledge was retained and summarised based on assumptions. However, rich IPL occurred between experts; for example, consultants would offer an abridged version of events if explaining things to an HCA or medical student, in contrast to complex discussions between staff of similar seniority or experience, such as nurse managers and consultants. Not apparent in my research, Sheehan *et al.* (2017) note that 'novices' may become excluded from learning as experts interact; as long-term members of the CoP, experts can have short episodes of information sharing that the novice may miss. In this current study, interest in the subject, in addition to presumed levels of understanding, were cited as reasons for the different approaches taken relating to knowledge differentials.

Literature pertaining to Knowledge Management (KM) sheds light on the finding that knowledgeable staff withhold information. Currie *et al.* (2007) articulate that healthcare policies are based on the presumption that knowledge is willingly and freely shared between professionals; the reality of knowledge sharing is that politics, and the human and social aspects of the NHS organisation, inhibit knowledge sharing. Jabur's (2007) research provides insight to doctors withholding knowledge, and explores knowledge transfer between doctors in two hospitals. The research showed that senior doctors were unwilling to share knowledge with junior doctors, and this was associated with poor social activities and communication processes for knowledge sharing, challenges of high workload demands, lack of time, lack of trust, professional status, the speed and quality of the knowledge exchange and communication skills.

KM can potentially influence and enhance interprofessional fields (Orzano *et al.*, 2008), and practice knowledge can be considered as personal ability and a “corporate asset”, therefore health organisations need to support knowledge sharing between members (Jabur, 2007, p. 250). However, Reddy and McCarthy (2006, p. 594) emphasise that deep knowledge is transferred through people not systems, but health professionals are “loath to learn from and share with each other”. Knowledge sharing in an organisation is linked to numerous benefits, including avoidance of medical errors, and empowering and enhancing explanations and decisions (Jabur, 2007), promotion of best practice (Jabur, 2007; Reddy & McCarthy, 2006), financial savings and improved performance (Bartunek *et al.*, 2003; Wang & Noe, 2010). Whilst the benefits of knowledge sharing, and therefore IPL, are widely cited in literature, insight into the contextual processes of sharing knowledge is less represented.

The current study’s finding that staff make assumptions of other’s knowledge and interest in learning, are reflective of Piquette *et al.’s* (2009) findings: doctors were surprised when nurses wished to learn more from an aetiological medical perspective, reserving physiological and diagnostic explanations as profession-specific knowledge. This thesis presents the context of knowledge sharing processes between healthcare professions through IPL and recommends that individual learner needs and motivation for IPL should be ascertained not assumed to optimise knowledge exchange and minimise knowledge differentials between professionals.

9.3.5 Enhancing IPL with Decision-Making Rationales

The current findings show it was beneficial to learning and professional development to provide a rationale during clinical decision-making processes. The rationale, when

coupled with instructions, offered explanation of inherent thought processes that informed care plans. Pragmatically, this was beneficial because supporting reasons with explanations was perceived by participants to increase the likeliness of task completion. In terms of IPL, the rationale gave insight to the critical thinking, analysis and reasoning that individuals had taken to reach decisions.

Copnell (2008) claims that knowledgeable practice is underpinned by knowing the reasons for actions in the pursuit of being rational, being competent by knowing how to perform tasks and accessing knowledge through inclusion in discursive practices. Interprofessional decision-making was a key moment for IPL, however, not all interprofessional interactions were appropriate for IPL. For example, during clinical emergencies when time constraints prevented interprofessional learning from being the focus of the interaction and patient safety was paramount. Ward rounds, when interprofessional activities, were advocated in the findings as rich opportunities for IPL. However, Bell *et al.* (2016) suggest that current literature focuses on medical intraprofessional learning, overlooking the benefits of fully engaged interprofessional approaches that can lead to IPL. The findings presented in this thesis suggest IPL can be enhanced by the provision of a rationale during interprofessional decision-making processes and informed the development of the CAUSE decision-making framework (see Appendix 10.8).

9.3.6 The CAUSE Decision-Making Model

The CAUSE model offers an example of a framework which could inform decision-making policy within critical care, presenting insight to the context of interprofessional interactions as staff learn together whilst caring and treating patients and enhancing

shared learning between professionals. The model has been constructed from the findings and needs to be validated for use within critical care practice. A case study exemplar observed during the fieldwork in this study is provided within appendix 10.8 to demonstrate the application of the CAUSE model.

The research findings suggest that by adding a rationale to clinical decisions or instructions, professionals can learn from the theoretical evidence base that has been considered whilst planning the day-to-day care of patients. It is possible to propose a framework for decision-making, which incorporates the clear articulation of the underpinning rationale as a result of clinical reasoning. When communicating decisions to the interprofessional team it would be beneficial to articulate the problem encountered, explain why this decision was chosen and articulate why other options were excluded. This approach promotes interprofessional dialogue, learning and shared understanding. An acronym has been developed to frame the approach to decision-making that promotes rationale provision and optimises IPL. The CAUSE Decision-Making model is presented below:

The CAUSE Decision-Making model

Condition	What is the condition or cause of concern?
Appraise	What solutions or interventions are possible?
Upshot	What effects may arise from possible interventions?
Safety	What are the safety risks involved?
Exclude	Which interventions are excluded?
CAUSE	State the final decision made and give the reasons why.

Figure 9.4 The CAUSE Decision-Making model

9.3.7 Holistic Patient Centred Care and IPL

Consistent with the current findings, Alexanian *et al.* (2015) found that as a CoP, staff shared the goal of PCC. Wackerhausen (2009) emphasises that whilst health professions differ, they are united by a shared goal of ‘doing the best’ for patients. Findings from the current research consistently presented PCC as motive for IPL. Participants were aware the patient was vulnerable to disruption during IPL, and patient care was promoted over IPL activity. Hoffman and Donaldson (2004) recognise that in areas with high patient volume and high patient acuity, learners gave more time to patient care, taking precedence over activities such as learning. The current findings reinforce the importance and prioritisation of PCC and rebut suggestions by Hudson *et al.* (2016) that claim attitudes towards PCC and IPL are declining.

Staff learned from others to care for patients, saving lives by collaborating and learning from crises by problem solving, decision-making and planning care that promoted patient well-being and safety. To achieve PCC, individual professions need high level skills, competence and knowledge about the phenomena and causal fields relating to patients illnesses; however, insufficient ontological and epistemic reach mean that no single profession has the skills, competence and knowledge to fully do what is best for the patient (Wackerhausen, 2009). IPL offers a means of authentically collaborating to share and develop the knowledge needed to provide ‘fully’ holistic PCC.

Sheehan *et al.* (2017) recognise the “classic tension of service versus learning” and the FICM and ICS (2019) emphasise the need for balance between the education of critical care staff and delivery of safe, high quality care, claiming the learning environment needs to encourage professional development as a high priority. This thesis presents

PCC as a key motive for IPL, and literature supports the finding that patient safety and quality of care are intrinsically linked to learning and professional development in critical care. The scope of learning between critical care staff needs to be extended to incorporate the holistic elements of each profession's knowledge, to collectively provide PCC. Participants believed knowledge gained from others maintained humanity in critical care and adopted a humanised holistic approach to IPL.

9.3.8 Interprofessionally Learning to Use Humour

Humour was a key finding in the research, present in all research sites and used for different reasons. The findings add to the body of knowledge around humour in healthcare, giving rich insight to its relationship to IPL. Humour was a bridge to IPL and influenced the IPL culture and climate in many ways; humour was an icebreaker, it created connections, created opportunities to interact and improved engagement in IPL. Humour helped staff to cope with the demands of critical care and broke down hierarchical barriers that deterred IPL. Humour developed rapport, improved staff morale and job satisfaction, and forged secure relationships and trust, which were the foundation of IPL. Critical care staff learned to use professionally appropriate humour in emotional situations, and this could humanise IPL, promoting PCC. Humour additionally promoted cognitive rest, reflection, and memory recall during IPL.

Particularly in emotionally demanding situations, Dean and Major (2008) found that humour forged connections between people and humanised situations. Humour could be used as an emotion focused coping strategy to release tension (Burgess *et al.*, 2010). The critical care community, as an emotionally charged environment, developed a dark sense of humour. Dark humour is recognised across diverse healthcare environments,

variously described as dark, black, sick, banter and sarcastic, forming an integral part of critical care interprofessional culture (Burgess *et al.*, 2010; Dean & Major, 2008; Thomson, 2010; Thornton & White, 1999). Adopted as a coping method in harsh environments like critical care, it can be referred to as ‘gallows humour’, and can transform negative feelings into positive acceptance (Burgess *et al.*, 2010).

The current ethnography elucidates the influence dark humour had on the socialisation of critical care staff, shaping professional identity in the CoP which influenced IPL engagement. Participants presented humour precariously; by its virtue of being a human attribute, humour could be misconstrued, and errors could occur with misunderstood information. Humour can mask underlying emotional tones and, send conflicting or hidden messages, open to interpretation (Dean & Major, 2008). In the current study, staff used humour to distance themselves from difficult situations, disguising their feelings, avoiding issues directly whilst still conveying important messages and knowledge through IPL. Findings from the current research present a mutual relationship between humour and IPL; effective use of humour facilitated IPL, and interactions from IPL developed humour. When humour was present, communities learned better, and the interprofessional interactions enhanced professional knowledge and skills to use humour professionally.

9.3.9 Humour as a Conduit to IPL

Interprofessional tension created disconnections between staff, and humour had the potential to relieve tension, enabling IPL. As a coping strategy, previous authors support the current findings and have linked the use of humour to relieving tension and normalising environments (Burgess *et al.*, 2010; Dean & Major, 2008; Thornton &

White, 1999). Humour gave critical care staff a voice; it increased communication, which became less guarded and more collaborative, improving transparency and increasing IPL engagement. Scholl (2007) believes that humour makes people less guarded and rapport develops from early humorous experiences. It was noted as easier to raise concerns by joking (Dean & Major, 2008), and in the current research humour made it easier to ask questions to aid IPL. Cohesion and collaboration in teams improve with humour (Dean & Major, 2008; Thomson, 2010; Thornton & White, 1999), further enhancing IPL. Humour was advantageous in terms of breaking down professional hierarchies, redressing status differences (Scholl, 2007) and respecting individual professionals (Dean & Major, 2008). CAIPE (2017) suggest that when professions learn together this cultivates mutual awareness, trust, and respect, thereby refuting ignorance, prejudice, and conflict in readiness for collaborative practice.

The advantages reported in literature relating to the use of humour could account for increased interactions, communication, and IPL in critical care. Humour provided professional intimacy and created opportunities for IPL within open cultures generating a sense of belonging to the critical care CoP. However, humour needed to be professional and its use was often learnt through IPL. Cautious and selective use of humour maintained professionalism, which is advocated by all corresponding UK healthcare professional regulatory bodies (GMC, 2019; HCPC, 2016; NMC, 2018). Previous literature considers humour in healthcare, claiming staff need “emotional flexibility” (Dean & Major, 2008, p. 1094) and interpersonal sensitivity (Scholl, 2007) to carefully use humour in daily interactions.

9.3.10 Humour as Respite for IPL

As a widespread time-consuming behaviour, humour humanised IPL and gave staff time to pause and reflect on their actions. Space to reflect is indicated by Stephens *et al.* (2011) to promote the development of knowledge, specific to professional identity and role development. The findings in this thesis associate humour with respite and cognitive rest during IPL; humour offered space to think, learn and make decisions. Humour buffered complex demanding situations and Dean and Gregory (2015) propose that humour offers respite from demanding circumstances. In this current research, the common use of humour during interprofessional interactions provided staff time to reframe complex situations, to formulate perspectives and to reduce tensions in demanding circumstances.

In addition to cognitive respite, physiological and psychological benefits from humour are widely cited; for example, humour has been linked with reductions in stress and muscle tension (Scholl, 2007). The current findings also highlight that when humour was integral to IPL, memory recall improved, often through the medium of telling stories, improving IPL participation. Enhanced feelings of cohesion and common ground are noted by Scholl (2007), and Dean and Major (2008) identify shared laughter and humorous stories with nurtured energy and an increased sense of community within groups. The learning environment can be revitalised (Thomson, 2010) and humour improves educational communication, forming part of the learning curve and aiding memory recall as it lightens subjects being learned (Thornton & White, 1999). The findings from the current research support previous findings in literature and present humour as an intrinsic human attribute, which influenced the readiness and receptiveness for IPL in the adult critical care environment, enhancing

neurological aspects of learning that aided collaboration, decision-making, and critical thinking. Humour facilitated coping and deflecting emotions, and the construct of emotional IPL (the next subtheme discussed) adds to the body of knowledge.

9.3.11 Emotional IPL

Piquette *et al.* (2009) agree that critical care staff commonly experience emotional distress, claiming that ‘collective anxiety’ disrupts teamwork and is detrimental to individual and team performance. An important finding constructed from the current study related to emotional IPL, as staff learned from others how to process emotions. Often, staff boxed emotions away or deflected them with humour, and formal structures to process, develop and learn from emotions, such as debriefs, were largely unexplored vehicles for IPL. Tallentire *et al.* (2011) emphasise that senior doctors avoid talking about emotions and disregard the extent that junior doctors could be affected by acute stressful situations. This resonates with the current study, and Tallentire and colleagues indicate a need to make time for structured debriefs; debriefing is recommended for critical care. The construct of emotional IPL led to realisation that IPL was holistic, and influential factors were physical, psychological, social, intellectual, and emotional. Emotions are discussed further in 9.6.7 *Emotions and Learning in Critical Care*, 9.6.8 *Learning to Manage Emotions* and 9.6.9 *Learning to Adapt Emotions*.

9.3.12 Interprofessional Presence

Findings give insight to the latent value of interprofessional presence when professions attended meetings, ward rounds and critical incidents. Retrospective IPL engagement increased when professionals had attended previous interprofessional group situations,

regardless of their preceding interactions. Van den Bulcke *et al.* (2016) note increased interprofessional collaboration following interprofessional meetings. The current findings recognise interprofessional presence as a means of informal introduction between staff, and this familiarity promoted interprofessional interactions and IPL beyond occasions with formal interprofessional presence. In essence, there was value in attending interprofessional meetings to beget future IPL.

This focused ethnography shows the visibility of staff in the environment was of greater influence on IPL than proximity. Whilst previous literature confirms the presence of staff affects collaboration (Alexanian *et al.*, 2015), and others reveal the influence of proximity (Conte *et al.*, 2015; Wagter *et al.*, 2012) and visibility (Ervin *et al.*, 2018; Kvan, 2013), current literature does not yet identify that visibility has the greatest influence on IPL. Visibility is linked to good and clear lines of sight, with open planned designs, ease of circulation around bed spaces and visibility between nurse stations and rooms, leading to improved communication and enhanced group discussions (Becker, 2007; Ervin *et al.*, 2018; Kvan, 2013). Becker (2007) emphasises that spatial transparency in environments, where staff have greater opportunity to see and hear what colleagues are doing, provides increased opportunities to share knowledge and learn from others behaviour and role modelling. Visibility of interprofessional colleagues within a workplace promoted IPL.

Regarding proximity, Conte *et al.* (2015) found that distance between staff initiated and refined collaborative practice. Wagter's (2012) study into informal IPL networks in critical care described proximity from several perspectives: functional, spatial and hierarchical. In my findings, IPL was affected by hierarchical and functional

proximity, since hierarchies were recognised barriers to IPL, and regarding professional roles, the overlap of tasks and jurisdiction between professions was influential on IPL. Spatial proximity, the actual distance between staff in the environment, affected IPL opportunities (Wagter *et al.*, 2012); additionally confirmed in my research. Interactions decreased with distance apart, and Becker (2007) and Wagter *et al.* (2012) explain that knowledge sharing and IPL opportunities improved when staff worked the same shift and had increased chances to meet each other. Whilst proximity is clearly linked with improved collaboration and IPL opportunity, the current research shows that without visibility, proximity becomes a superfluous factor with IPL. It was more important for staff to see each other to interact and learn than to be closely situated without visibility.

9.3.13 Critical Care as an Extended Work Family

An unexpected finding related to the perception of the critical care team as a 'work family'. This is supported by Alexanian *et al.*'s (2015) research; 'family' was a term used to describe teams of equals in critical care. PhD findings shared by McGloin (2014) intimate that staff form a 'critical care family' and patients described the strong sense of belonging to this family during their stay, further reinforced by the provision of PCC. The formation of a 'work family' in critical care and its relationship to IPL falls outside the focus of this ethnography and therefore requires further research, but participants explained feeling part of a work family increased professional rapport and promoted collaboration.

9.3.14 Extended Professional Roles and IPL

D'Amour and Oandasan (2005) indicate that bodies of knowledge define professions, and this ethnographic research illustrated that critical care units that extended the

professional roles of interprofessional team members added new layers to the team structure which needed to have clearly defined role boundaries. Coombs and Ersser (2004) have indicated that understanding of professional knowledge and roles is needed to promote inclusive collaborative interprofessional practice. The research findings in this thesis suggest that when staff with newly extended roles were introduced to the team, they could be perceived as a threat to existing team members, and this could be explained by tension that is noted to occur when there is lack of insight to unique professional roles (Hawryluck *et al.*, 2002).

The findings presented in this ethnography showed how staff with extended roles could be more approachable with regards to interprofessional learning than staff working within a traditional hierarchy; participants gave examples of how it was easier to approach an ACCP who could be registered with a nursing or physiotherapy professional regulatory body rather than a medical doctor. Being approachable to answer questions in critical care is associated with effective learning environments (Muldowney & McKee, 2011), and this research notes that extended professional roles may improve approachability and promote IPL.

9.3.15 Leadership and IPL

IPL culture permeated from leaders to the interprofessional team members working in adult critical care and Clark (2006) claims that complex profession-specific knowledge creates power, based on the mastery of knowledge development. Hierarchies and leadership styles adopted by professions with power influenced IPL; IPL culture permeated down from leaders and IPL was cascaded down hierarchical lines. Swanwick (2005) refers to the position that doctors assume in society and the power

relationships they adopt with colleagues. Such hierarchies, when imposed, were perceived as a barrier to IPL in critical care by participants in the current research.

Alexanian *et al.* (2015) explains that medical dominance and hierarchy exclude IPC and affect decision-making, professional socialisation, trust, and respect. Effective learning environments and collaborative teams are influenced by leadership (Laksov *et al.*, 2015), that is responsive and proactive (McPherson *et al.*, 2001). Xyrichis (2018) emphasises that good leadership is the catalyst for collaboration. Shared leadership promotes informal learning and ‘collective learning’ in the workplace when leadership focus recognises and values IPL as an integral component of practice (Nisbet *et al.*, 2013). Leaders within hierarchies can act as role models, shaping the behaviour of teams (Highfield, 2019). The literature supports the finding that hierarchy influences IPL in critical care and insight into the context of interprofessional interactions is provided in the rich ethnographic account, furthering understanding of the relationship between hierarchy and IPL.

The rich ethnographic findings uniquely contribute to the body of existing knowledge with respect to the field of IPL in numerous ways, moving current literature forward with respect to IPL fields of practice.

9.4 *Situating Findings within Literature: Embedding IPL*

When situated within literature, the three overarching themes constructed from the focused ethnography contribute to increased understanding of IPL in the context of

adult critical care. The first overarching theme, *Embedding IPL*, advances current literature about the environment, the ways staff learn together and critical care practice.

9.4.1 *Physical Environmental Factors*

Physical environmental factors influenced IPL culture and were constructed negatively as detrimental influential factors when space, light, noise, and temperature were suboptimal for learning. These findings are cognisant with theories that consider effective learning environments. For example, Lodge *et al.* (2016) describe the Dunn and Dunn's learning styles model, recognising the environment as a variable affecting learning, with factors such as sound, temperature, lighting and design affecting the learning experience. In critical care, Ervin *et al.* (2018) found that uneven lighting, almost constant alarms and poorly positioned equipment hindered and deterred teams. Recent UK critical care guidelines (FICM & ICS, 2019) emphasise the need to design critical care units that consider noise, natural light, colour, decoration schemes and sufficient storage space, in addition to providing access to outdoor spaces for long stay patients. Department for Health and Social Care (2013) guidelines additionally influence the design of critical care environments, yet many units do not use space optimally (Ervin *et al.*, 2018) and the current research presents this as a challenge.

9.4.2 *Space, Place, and IPL*

Space and place are essential units of analysis in health professional education; space is defined as a void or location, whereas the term place infers a felt experience that holds and locates things within a space (Bleakley, 2013). Nordquist *et al.* (2011) suggest that increased insight into space, place and learning enables the design of practical spaces promoting principles of IPE and Bleakley (2013) claims that space

and place have previously been poorly conceptualised in literature. However, recent publications have increased insight (Caverzagie *et al.*, 2019; Nordquist *et al.*, 2019a; Nordquist *et al.*, 2019b). This thesis furthers the evidence base on space in the context of critical care with respect to IPL culture.

Space can be conceptualised in numerous ways; Bleakley (2013) discusses space from the perspective of social space, giving the example of social experiences in hospital wards, cognitive space describing individual thought processes, and development space including socio-economic space relating to the formation of professional identity. The current rich ethnographic findings consider social space in critical care through interprofessional interactions leading to IPL, cognitive space is considered as individuals learning independently through reflection, and development space is considered as staff being professionally socialised into the CoP.

Lefebvre views space from the perspective of perceived, conceived and lived spaces. Gregory *et al.* (2014) claims that such spatial theory facilitates understanding of IPL in acute care, and they explored Lefebvre's theory considering conceived spaces that are designed for specific purposes, perceived spaces that capture the acts taking place in the space and lived space where the design and acts combine to form the lived experience and reality of the space. In the research sites explored in my study, conceived spaces would view the corridor as a route to move from one space to another, as a perceived space where staff and patients walk and equipment is moved through and the observations in the research captured the lived space of the corridor as a space to socialise, interact and to learn interprofessionally.

From the perspective of lived spaces, the current findings illustrated that staff created learning zones in areas not originally designed for learning, such as empty patient rooms for insitu simulation. Bell *et al.* (2016) concurs that shared learning occurs in spaces designed for other purposes. When space for learning was constrained, staff became creative and territorial as they designated clinical areas as learning zones. The relationship between space and interprofessional interactions in healthcare environments has been contemplated by Kvan (2013), who urges consideration of how welcoming spaces are to professional groups and whether the critical care as a learning environment enables interprofessional discussion and learning. This feature reflects the openness and friendliness described by participants which promoted IPL.

Foucault initially conceptualised medicine as a spatial phenomenon and theorised primary, secondary and tertiary ‘spacialisation’, with gaze and surveillance integral to spatial phenomena (Bleakley, 2013). For example, medical dominance was presented as diagnostic medical gaze and public spaces were perceived through different gazes and with health surveillance (Bleakley, 2013). The finding that the physical environment was only one influential factor in the complex learning environment of critical care is supported by Becker (2007) who identified several organisational design factors linked to interactions and learning. Akin to my research, he stated that increased opportunities to interact and share knowledge fostered trust and team cohesion, emphasising that environments that offer spatial transparency do not operate in a ‘cultural vacuum’; they require culturally supportive leadership.

9.4.3 Creating IPL Zones

Within the ethnography, spaces where professions regularly collaborated were referred to as ‘hotspots’ and ‘learning zones’. In my findings, hotspots included the nurse

station and the patient bedside. Gregory *et al.* (2014) similarly describe such spaces as ‘action hotspots’, Sheehan *et al.* (2017) refer to ‘cluster points’ and Bell *et al.* (2016) identify the nurse station as the centre of unit activity. Whilst the hotspots for interprofessional presence were common across research sites, the size of the critical care units differed in the current research. Critical care guidelines recommend that large units should be divided into smaller units, with between eight and ten beds to facilitate critical care provision (FICM & ICS, 2019). This practice was observed during the research and had an insular effect on IPL; as excessive environmental stimuli were lessened this promoted IPL, and subcultures formed between team members strengthening learning, increasing the sense of belonging to a discrete CoP, but this risked fragmentation of the wider critical care team. This aspect of workplace design is identified by Becker (2007) as a factor affecting team interactions and learning, and the term ‘human scale’ refers to the benefit of designing spaces with smaller scale work areas but with minimal separation between related functional areas to avoid fragmentation.

9.4.4 Neutral Zones for IPL

Becker (2007) refers to ‘neutral zones’ that are not dominated by particular professions but are communal spaces. In critical care these spaces included break rooms and corridors, and Bell *et al.* (2016) claim that learning is likely to occur spontaneously in corridors and coffee rooms, rather than in formal settings. The staff room, whilst variable in terms of IPL in the current findings, was recognised as a space for nurturing interpersonal relationships between staff, providing respite from work, space for work related discussions such as informal debriefs and to vent emotions, which could facilitate effective IPC leading to learning. These findings are supported by Hunter and Scheinberg (2012) with respect to the ongoing informal interactions that take place

in the healthcare staff ‘tea-room’ which lead to ongoing opportunities for informal learning, and Jackson *et al.* (2018) in relation to critical care nurses processing and sharing experiences through informal debriefing at nurse stations. The findings presented in this thesis extend existing literature with the insight that building therapeutic relationships in neutral spaces in critical care enhanced IPL opportunities.

IPL occurred in the neutral zone of corridors in the current research and this location is considered previously in literature (Bell *et al.*, 2016; Bleakley, 2013; Carthey, 2008; Kitto *et al.*, 2013; Kvan, 2013). Whilst an unconventional meeting and teaching space, corridors could be productive places for learning (Bell *et al.*, 2016; Bleakley, 2013), often utilised informally as teams move between clinical tasks and patients (Kvan, 2013). Carthey (2008) challenges the assumption that minimising circulation spaces, such as corridors, reallocates space to areas perceived to have greater importance; corridors facilitated interactions between interprofessional teams, affected team function and offered informal means of communication and learning in a professionally neutral space. The findings presented in this thesis offer insight into the role of the environment on informal IPL between staff, an aspect of healthcare practice which Becker (2007) argues is overlooked.

9.4.5 Impression Management and IPL

The neutrality of spaces in critical care can be explored from the perspective of Goffman’s impression management, whereby people control the impressions others have of them through their presentation of self (DuBrin, 2011). Self-presentation is influenced by the ‘performance’ of others positioned as either ‘frontstage’ or ‘backstage’ in an area. Goffman (1990, p. 31) used the term performance to describe an individual’s activity in the presence of observers; whilst frontstage captures the part

of the performance that is defined, fixed, and observed by others, backstage is the place relative to their performance where the impression fostered can be knowingly contradicted, constructed and critiqued in a space that allows the ‘performer’ to relax away from observers. From this perspective, people present themselves differently dependent upon the space they occupy, and spaces such as break rooms would be considered ‘backstage’; conversely, public facing areas, such as patient bedsides and nurse stations, would be regarded as ‘frontstage’. The professional use of humour is an example of the varying staff behaviour between front and backstage performances.

Therefore, the rich and often spontaneous interprofessional interactions occurring in profession neutral backstage spaces were recognised in my findings to increase IPL opportunities, and can be viewed by the professional behaviour and impression management presented by critical care staff. Hierarchies were observed to dissipate in less formal situations and Lewin and Reeves (2011) explain that staff could relax and prepare in backstage areas that were informal and not public. However, the corridor can be viewed as an area of fluidity; in essence it is between frontstage patient populated areas and backstage private rooms such as offices. Corridors are “off centre” and form part of the “underbelly”, “otherness” and “backstage presence” of hospitals (Bleakley, 2013, p. 28).

The concept of fluidity between spaces represents moments when the front and back temporarily meet (Lewin & Reeves, 2011). The dual aspect of the corridor, where patients may occasionally be in the vicinity as staff communicate away from frontstage areas, accounts for the professionally focused nature of informal IPL occurring in this space. As a learning space in the current research, the corridor was exposed sufficiently

to the public to retain a professional focus, but sufficiently removed enough for relaxed IPL to occur. Bleakley (2013) explains that corridors are smooth liminal spaces, which cross boundaries, suspend hierarchy and act as catalysts for collaboration, promoting opportunity for interprofessional interaction. The value of the corridor as a space for IPL is clearly illustrated in this ethnography.

9.4.6 Socialisation and IPL

Lewin and Reeves (2011) claim that Goffman's work has been extensively drawn upon to explain people's 'performances' in healthcare, providing insight into how practitioners are socialised into their respective professions as they prepare backstage for their frontstage professional presentation. Stephens *et al.* (2011) additionally claim that Goffman's theory is pertinent to inform contexts relating to collaborative working and learning, as they explored student orientation within interprofessional critical care teams. Socialisation enables learning and knowledge sharing (Bartunek *et al.*, 2003), and the professional socialisation of staff in critical care and their role within the CoP was associated with interprofessional interactions and IPL. The essence of being socialised into the health professional system is described by D'Amour *et al.* (2005) as professionals being shaped by profession-specific frameworks, that give access to rigidly defined professional jurisdictions, that share a disciplinary worldview. My findings confirm this, as professional perspectives and roles were defined and could overlap, this affected interactions, decision-making, and IPL. Findings were additionally consistent with Burford *et al.* (2013) who found that nurses' were integral to doctors' professional socialisation, and Alexanian *et al.* (2015) found that interprofessional contributions to decision-making were affected by professional socialisation. Professional role recognition was therefore an important part of

professional socialisation, and as in this thesis, a limited understanding of roles prevented individuals' knowledge and expertise from being fully utilised to inform patient care decisions (Northway & Mawdsley, 2008).

9.4.7 Legitimate Peripheral Participation and IPL

Learning through socialisation has been compared to master-apprenticeship relations and legitimate peripheral participation (LPP) (Bartunek *et al.*, 2003). In these circumstances, as is presented in this thesis, contextual practice knowledge is shared between experienced staff and newer team members who learn their professional role and become familiar with the cultural norms through gradual participation within the community (Bartunek *et al.*, 2003). LPP was widely observed as a way of learning by being situated in the critical care environment, and LPP was a term coined by Lave and Wenger (2008) to describe situated learning, where social learning is developed through co-participation in a CoP. Staff were often observed on the periphery of teams, and this situated them within the vicinity of active learning groups and increased opportunities to co-participate with IPL, gradually becoming part of the CoP. LPP is one example where staff engaged in IPL and as analysis of the findings progressed, numerous learning theories were helpful to situate the complex processes that led to IPL within educational theories (appendix 11).

9.4.8 Learning Theories and IPL

The theme *Learning from Others* describes how staff sought knowledge from others, which can be explained by Vygotsky's socio-cultural learning theory of seeking 'more knowledgeable others', and social cognitive theory from Bandura, in line with social constructivism, considering learning from observing role models, guiding and shaping

practice (Pritchard & Woollard, 2010). Wackerhausen (2009) emphasises that informal tacit learning in COPs enable imitation, and the trials of daily practice for individuals to gradually acclimatise to their professional identity. Vygotsky's zone of proximal development (ZPD) is central to social constructivist learning theory (Pritchard & Woollard, 2010), and with respect to the current findings, the depth of learning was extended when staff were provided appropriate instructional conditions within their ZPD, for example through supervision and coaching (Schunk, 2009).

Piaget's concept of schema, as cognitive structures that organise information and knowledge into meaningful systems (Schunk, 2009) reflects each professions body of knowledge, as role boundaries and jurisdictions affected interactions and IPL, and new knowledge from IPL added to, or altered, existing schema through assimilation or accommodation (Pritchard & Woollard, 2010). The current findings reveal the intricacies and context of critical care learning. Links to IPL are not always explicit in literature, my findings are consistent with numerous studies and can be understood from the perspective of educational, psychological, and sociological theories.

9.4.9 Inquisitiveness in IPL

Inquisitiveness refers to the curiosity to find out greater detail about a topic, and staff learn in diverse ways, through independent study, questioning and reflection Huggins (2004). Hansen and Severinsson (2009) emphasise the importance of creating learning cultures that promote discussion and questioning, because the intelligence of the team exceeds individual members, and this enables teams to provide collaborative patient care. Wagter *et al.* (2012) classifies asking questions and observing others as 'plain day-to-day informal learning'. Effective teams were dependent upon being able to

access members' knowledge and skills in a timely manner (Becker, 2007) and interprofessional interactions manage 'atypical' learning situations, that were uncommon and required negotiation and problem solving approaches (Boud & Middleton, 2002). Current findings are all reinforced by this literature, and the deep insight offered from the context of the critical care environment furthers the evidence base in these areas.

9.4.10 Interprofessional Simulation, Debrief and Reflection

Experiential learning by doing, such as simulation, offers great potential for IPL. Whilst practitioners expressed interest in interprofessional simulation, participation in this area of learning and development varied, with some professional groups more engaged than others. Stephens *et al.* (2011) alluded to the realities of interprofessional simulation in critical care for CPD and student learning, and found that reflection needed space, and dialogues had to be meaningful to develop competence. Insitu simulation in critical care offers a solution for staff unable to leave the clinical area to attend training. The RCP (2018) recommends insitu simulation as a means of learning in busy clinical workplaces, and Leclair *et al.* (2018) advocate simulation for critical care teams to promote interprofessional interactions, to reflect on shared learning experiences, to provide debrief opportunities and to learn within their CoP. As a credible authentic learning activity (Stephens *et al.*, 2011), insitu simulation offers potential to enhance critical care IPL culture.

Reflection and debrief are recognised as further opportunities for IPL but were rarely instigated in critical care practice. Limited literature on the topic of debrief in clinical practice, when staff are formally supported following practice experiences, is

reflective of the dearth of utilisation of this learning approach in everyday practice. Debrief literature tends to focus educationally with simulation based education (Sawyer *et al.*, 2016), and in my research participants identified emotional debriefing following critical incidents often with paediatrics and anaesthetics but rarely in adult critical care, further indicated by literature (Ireland *et al.*, 2008; Tan, 2005). Medical debrief, originating from military and aviation, forms the ‘central pillar’ of healthcare simulation and is underpinned by educational theory (Abatzis & Littlewood, 2015).

The benefit of facilitated team debriefings have been recognised for “real patient care situations”, to reinforce simulated learning and promote organisational safety and learning (Dismukes *et al.*, 2006, p. 24). Abatzis and Littlewood (2015) advocate the transferability of debriefing practice beyond simulation, recognising its value as a powerful feedback mechanism, providing IPL opportunity with genuine reflection of authentic experiences that can promote patient safety. Despite these claims, the findings from this ethnography showed debriefing rarely happened in critical care. Whilst literature emphasises the need for critical care staff to support each other, the opportunity to talk about emotions through such processes as emotional debriefing is often a recommendation for future practice (Henrich *et al.*, 2017; Jackson *et al.*, 2018; Piquette *et al.*, 2009; Scholes *et al.*, 2013). Levels of emotional IPL and debriefing appear inconsistent, and the introduction of Schwartz Rounds ® in healthcare offer potential to learn about emotions (Lown & Manning, 2010), increasing the focus on emotional IPL.

The RCP (2018) and professional regulatory bodies (GMC, 2019; HCPC, 2016; NMC, 2018) advocate reflective learning. Zarezadeh *et al.* (2009) claim that reflection and

IPL are grounded in adult learning theory, integrating theory and practice, which can lead to shared meanings between professions, improving understanding and respect for professional roles in MDTs. Reflection has been debated by Wackerhausen (2009) and has been described as reflecting on, with, from and in something. Seminal work by Schön (1983, 1987, 1991) coined the terms reflection-in practice and reflection-on practice, introducing the concept that to enhance practitioners' knowledge and skills, reflection about present or past events could be conducted using a structured reflective approach. Reflective learning is influenced by dialogue and questions, increasing awareness of professional role and identity, boundaries and limitations (Zarezadeh *et al.*, 2009). The GMC (2018) have recently published a reflective practice guide, and associated benefits include improving care quality, promoting staff wellbeing and development, and enhancing learning for individuals and organisations. They advocate that group reflection identifies complex issues creating system change, therefore interprofessional reflection should be supported by organisations.

Despite wide recommendations for reflective practice, research participants often presented resistance to this learning approach. Zarezadeh *et al.* (2009) caution that if reflection is constrained as a uniprofessional activity, it may inhibit the development of mutual respect and trust that arises from shared professional meaning, potentially leading to professional territoriality and professional ethnocentrism that create barriers to IPL. They propose that reflective practice focusing on professional roles and input in the team can improve understanding of remits, reinforce acquaintances creating appreciation and respect. Interprofessional reflection presents opportunities for rich IPL and warrants further exploration.

9.4.11 Interprofessional Approaches

Fully engaged interprofessional approaches were inconsistent in the current research; a key finding showed exclusion of physiotherapists from ward rounds and interprofessional meetings. Participants explained their exclusion in relation to workloads, rotations, and historical practice. Critical care standards (FICM & ICS, 2019) emphasise that physiotherapists must participate in interprofessional activities such as handovers, MDTs, integrated decision-making and disseminating information. The guidelines highlight that educational activity of the critical care team, consisting of nursing, medical and allied health professionals, should be reflected in the learning environment with shared participation in IPL. The standards additionally state that consultant-led teaching programmes should be open to all MDT members. Whilst the ethnographic findings intimate interprofessional attendance was possible, the reality was that medical teaching remained insular intraprofessional events, where jurisdictions and role boundaries were rarely crossed, and hierarchical statuses persisted.

There were additionally times when fully engaged interprofessional approaches were inappropriate, such as during handover. Handovers were rarely seen as appropriate for IPL; their sole purpose was to convey information safely and effectively, not to distract this informative process with learning. Philpin (2006) describes handover as the transference of end of shift information between staff, via both verbal and written routes, which in critical care is a complex multifaceted process. Beyond the transmission of information, handovers have been linked to culture and rituals in teams with shared meaning (Philpin, 2006), as the sharing of personal and professional knowledge that influences patient care through documentation (Hardey *et al.*, 2000),

and as a route to complex collaborative and supportive communication, that encompasses social and historical contexts, and where critical care nurse handovers use verbal approaches, whereas critical care medical handover use documentation (Manias & Street, 2000a).

Whilst handovers extend beyond sharing information, the nuances in literature relating to context reveal profession values, cultural practices, and environmental differences, but do not allude to explicit levels of learning or knowledge sharing. This supports participants perspective that handover was not a place for IPL. However, moments for IPL could occur around and between interprofessional activities, for example as staff gathered for handover or interprofessional meetings. Informal IPL, which was spontaneous and unplanned, could occur in these times and staff capitalised on opportunities to seek knowledge from others. Some participants questioned the value of these brief moments, but the RCP (2018) acknowledge the accumulative value of learning in the busy clinical workplace. Sheehan *et al.* (2017) also found that learning opportunities that were short and “bite-sized” were less visible, taken for granted, and may be valued less by learners.

9.4.12 Moments for IPL

Recognition of IPL moments in daily critical care practice varied, and Nisbet *et al.* (2013) claim that greater recognition and utilisation of informal IPL in healthcare can promote reflective learning. Boud and Middleton (2003) emphasise that making IPL visible to others enables it to be ‘consciously deployed’ to enhance the quality of work. Nisbet *et al.* (2013) call for greater focus on learning for it to be more explicit in the healthcare workplace. Participants often overlooked IPL when it was integral to daily

practice, and recognition of IPL in everyday work is often cited as poor (Boud & Middleton, 2003; Eraut, 2004; Sheehan *et al.*, 2017). Study participants debated the value of explicitly recognising IPL, for fear that it would deter the rich and informal nature of IPL. Huggins (2004) cautions that providing learning outcomes prior to IPL could become demotivating, preventing learning as spontaneity is replaced with formal teaching. Conducting this ethnography overtly on the topic of IPL made previously implicit learning between professionals more explicit by virtue of observation. Therefore, the presence of individuals who focused on learning affected IPL culture; for example the presence of a clinical educator was linked by participants to increased IPL in the environment and the FICM & ICS (2019) demand that each critical care unit should have one clinical nurse educator for every 75 staff. The presence of role models, advocates and organisational support for learning increased the recognition of IPL, which promoted collaborative learning between staff, but this risked spontaneous informal IPL.

9.4.13 Critical Care Practices and IPL

Critical care practices were influenced by rituals and regular activities, they were affected by external drivers, such as competence, education and professional regulatory body validation, and the use of artefacts in the environment. Wackerhausen (2009) notes that everyday routines and habits in familiar daily practice shape the embodied and implicit aspects of professional identity that are often unconscious, producing ‘automatized behaviour’. For the critical care team, habitual and ritualised practice was observable in the details of daily practice. Rituals as an indication of conformity and discipline are often associated with anxiety laden environments, that become difficult places to ask questions and they undervalue the time needed for staff

to learn (Muldowney & McKee, 2011). When rigid, ritualised practice prevents IPL, and participants in one research site illustrated the resistance encountered with the new practice of introducing regular MDT meetings, despite reports of multiple benefits for levels of IPL and organisational efficiency from those who participated in the MDTs. Critical care practices, entrenched in culture, were affected by rituals, and learned routinised behaviours.

Another critical care practice was related to feedback and validation. Participants' wanted the feedback and validation given to individuals for learning, and expressions of praise and appreciation were described as desired but were lacking in the environment; this feedback was particularly lacking from consultants. Whilst contextual factors can affect bedside teaching, feedback is recognised as integral to medical teaching by Balmer *et al.* (2010), and Teunissen *et al.* (2007) identify receiving feedback as a means of clinical learning. Varpio *et al.* (2014) define formal feedback as a response to a trainee's performance of knowledge and skills that offers information to improve future performance, and summative feedback is defined as a response to a trainee's performance that confirms accuracy through evaluation. In Varpio and colleagues informal educational research, they recognise informal intraprofessional learning events as more common than IPL events, feedback was provided in 12.8% of IPL events and 12.2% of intraprofessional learning events. Therefore, feedback forms part of interprofessional learning processes and McPherson *et al.* (2001) identify knowledge and respect for teamwork contributions as key to effective collaboration. Ongoing professional, emotional and social support should be provided in the workplace (Burgess *et al.*, 2010). Therefore, literature suggests that feedback, appreciation, and support appear to influence clinical workplace learning,

and participants in the current findings sought feedback from others as a means of validating learning. Tensions existed when displays of respect and appreciation were lacking from feedback; Price (2013) indicates variable support for critical care staff, and support is recommended to promote IPL in critical care.

9.4.14 Artefacts and IPL in Critical Care

The subtheme *Using Artefacts* in this thesis, considers the context and influence of objects in critical care on IPL culture. Sheehan *et al.* (2017) define artefacts as objects or equipment in a physical environment. In critical care, artefacts included documentation, notice boards, medical devices and technology. Hoffman and Donaldson (2004) explain that clinical staff use the physical tools of the CoP, such as computers, to access and organise information regarding cultural norms. Health professionals in the CoP develop and regularly use tools and artefacts to communicate, solve problems, share information with others and make plans (Sheehan *et al.*, 2017).

Technology was used to care, to communicate and to learn. Critical care is delivered with a combination of care and technology, and technological competence is integral to critical care practice, relating to vigilance in the environment (Price, 2013). Leslie *et al.* (2017) found that health information technology, defined as the ‘computer work’ shaping clinical relationships, widen social and professional divisions and build ‘silos’ when face-to-face communication is replaced with technology. Computers are perceived to increase the distance between people (Price, 2013), and the current study noted the way technology could interrupt communication, but additionally as an artefact, technology created a place for staff to gather around (Sheehan *et al.*, 2017).

With the goal of providing complex treatment that is individual and humane, the view of critical care technology is becoming more positive and holistic (Price, 2013). Tunlind *et al.* (2015) claim that critical care could not function without technology, and staff providing care need to be skilled in its use. To meet patient goals, staff need to use knowledge and skills to use technology appropriately in critical care (Price, 2013), but Tunlind *et al.* (2015) note technology is contentious, as both an important tool, but also a potential barrier to PCC as large amounts of time are spent using technological equipment.

With respect to social learning theory, Sheehan *et al.* (2017) explains that “ways of knowing” and working are embedded in the artefacts and tools used, whereby knowledge resources, such as patient notes, are interpreted, applied and integrated into professional dialogues. This resonates with the current findings, where documentation remained central to critical care practice, despite ongoing technological advances and included patient notes, policies, and notice boards. All influenced IPL culture. Patient notes were often completed in visible spaces at the patient bedside or nurse station; these practices increased visibility of staff on the unit and Sheehan *et al.* (2017) note that an artefacts location can attract clusters, so interprofessional staff work beside each other as they completed notes, increasing potential for interprofessional interactions that could lead to IPL.

Documentation also prompted questions. Codified knowledge is a kind of knowledge defined by Eraut that resides in artefacts such as records, books and protocols (Teunissen *et al.*, 2007). Sheehan *et al.* (2017) adds that socio-cultural learning views knowledge as distributed across people and artefacts, with a collective memory

residing in artefacts, protocols, and team rituals. Documentation has value for facilitating knowledge sharing, and this is linked to improved collaboration and team working (McPherson *et al.*, 2001; Sheehan *et al.*, 2017). Therefore, artefacts draw people together, can become the ‘foci’ for frequent interprofessional interactions and are potential resources for knowledge (Sheehan *et al.*, 2017), which was observed in the IPL hotspots of this current study.

9.4.15 Time and IPL

Making time for IPL was a recognised challenge in critical care, despite professional guidelines recommending allocated time for learning and professional development. For example, supernumerary periods are stipulated in critical care guidelines for newly appointed staff to enable fundamental levels of competence in the specialist area of practice (FICM & ICS, 2019). In UK nursing, critical care competencies have been introduced (CC3N, 2015) and time needs to be safeguarded for their completion. For medical education, the RCP (2018) has extended the key message that doctors “are never too busy to learn” and research by Stephens *et al.* (2011) indicate that time is required for different professions to facilitate reflection and become professionally socialised in critical care. Trainers also need time and resources to prepare and deliver education to staff, and deficiencies in the learning environment with regards to educational provision should be reported (FICM & ICS, 2019).

In critical care, time is prioritised to caring for critically ill patients and their families and this is central to the workload of critical care staff. Hoffman and Donaldson (2004) indicate that patient care assumed most of the staff time in areas like critical care to the detriment of learning opportunities, as learning moves away from independent and

informal learning, towards sources of information providing quick and timely answers that help to complete patient care related tasks. Regardless of the learning opportunities presented to staff, when workloads were high and time was insufficient, staff could not engage in learning as patient care took precedence and frequent interruptions were noted as a reality of IPL in critical care, highlighting role conflicts between staff learning together and providing care (Hoffman & Donaldson, 2004). Participants in this current research presented time constraints as perceived and actual barriers to IPL, and protected moments for IPL were desired in day-to-day practice.

The time of day influenced engagement in IPL and moments of predominantly intraprofessional presence reduced IPL opportunities. Night shift notably had less professions in attendance, and partial participant observations during data collection completed at midnight and restarted with the early shift handover to account for this recognised situation. Ethnographic observation of learning undertaken during daytime shifts are seen in other studies, such as Sheehan *et al.* (2017), although the rationale for this is not provided. Conversely, literature neglects to explicitly relate the time of day with IPL; the nuances from this research showed that whilst humour and building therapeutic relationships were more commonplace overnight creating the foundation for IPL, at night IPL opportunities were limited.

Working conditions overnight differ from daytime; the environment is subdued and silent to promote patient rest, lights are dimmed and staff fatigue affects concentration (Nilsson *et al.*, 2008). Conditions for learning during nightshift are altered; partly because regular activities such as ward rounds are rare at night, this makes learning experiential, and shifts the primary source of learning to the patient (Nilsson *et al.*,

2008). However, nurses, and indeed all professional groups, still need to be competent and skilled, regardless of the time of day they work (Nilsson *et al.*, 2008; NMC, 2018). Margretta *et al.* (2019) suggest that night staff have less access to educational opportunities than their colleagues on day shift, so critical care provision is often provided with fewer resources, leading to disengagement and high staff turnover. With regards to IPL at night, Campbell *et al.* (2008) explained that doctors were often unfamiliar with the unit staff and patients, nurses' decided when to contact medical colleagues and the nurse-doctor conversation usually occurred on the telephone, reducing face-to-face contact. Night shift working, with altered working patterns and diminished access to educational opportunities, can reduce staff skills, therefore night staff need opportunities to apply their full levels of competence that have been developed in education and practice (Nilsson *et al.*, 2008).

Weekends, with fewer interprofessional staff present, resulted in longer interactions and IPL prospered in the more relaxed environment. This may be accounted for by the blend of working conditions between day and night shifts; environmental conditions are optimised, for example lighting and noise levels are sufficient for learning, and weekends have fewer patient tasks and procedures, which reduces workload and retains focus on the patient, promoting experiential learning but with prolonged interprofessional presence and interactions leading to rich IPL.

9.5 *Situating Findings within Literature: Collaborative IPL*

The second overarching theme, *Collaborative IPL*, advances current literature regarding factors that influence collaboration leading to IPL, and relates to staff influences, building relationships and disconnections that can occur within the

community of critical care practice. Findings illustrated that IPL was promoted by collaboration and was affected by professional roles, leadership and interprofessional presence (discussed in 9.3 *Original Contribution to the Evidence Base*). Consistent with this, Swanwick (2005) emphasises that informal learning is characteristically collaborative, leading to knowledge and skills that are specific to context.

9.5.1 Professional Roles and Jurisdictions

Alexanian *et al.* (2015) state that informal interprofessional interactions are common in critical care, and Northway and Mawdsley (2008) claim that most critical care units are designed to function with interprofessional teams, with patient care decisions based upon professionals' knowledge and expertise. However, they argue that essential components of 'true interprofessionalism' are missing, due to limited relational insight into colleagues' professional roles, which means that individual's knowledge and expertise are not fully utilised.

Understanding professional roles and jurisdictions was associated in the current study with increased IPL and teams worked collaboratively when professional boundaries were clear, as supported by Swanwick (2005). However, whilst collaboration provided IPL opportunities; this was not guaranteed to happen. Generally, healthcare provision requires health professional collaboration, and staff can work in the same place or be dispersed throughout hospitals, but patients require a holistic approach regardless of staff location or their sense of belonging to a team (McPherson *et al.*, 2001). McPherson *et al.* (2001) advocate clear aims and shared goals as essential features of collaborative working. Wackerhausen (2009) explains that whilst IPC is required, as professions work towards the shared altruistic goal of PCC, they have intraprofessional

goals, which are idiosyncratic and competitive, creating barriers to authentic collaboration. This insight is supported by the current findings in this thesis, and professional perspectives were associated with the IPL culture and climate in each environment. Pritchard and Woollard (2010) refer to Bandura's theory of 'collective agency', and describe it as an extension of human agency, where staff share beliefs and aspirations with the goal of making improvements. These approaches and commonalities were cited by participants in the current research as integral to their strong sense of belonging to the critical care CoP.

9.5.2 Critical Care as a Community

The FICM & ICS (2019) use the term community to describe critical care units across the UK, and the findings of the current research showed that the critical care team was influenced by socialising and commonalities, such as shared languages and shared values, that were forged by different professional perspectives in the interprofessional team. Shared values of PCC were central to the critical care community, and it was observed that critical care staff share language, with terminology and meaning inherent with idioms. Swanwick (2005) emphasises the importance of socio-linguistic learning in healthcare and describes learning to 'talk the talk'. He explains with professional discourse and behaviour, professional world views, thoughts and feelings are reflected in the language used by professionals. Language in a CoP is specific and is learned as staff are enculturated into healthcare practice (Hoffman & Donaldson, 2004). Shared language reinforced the commonality of staff within the CoP and Wackerhausen (2009) explains becoming part of a profession requires attuning to group behaviours, including ways of speaking, questioning and explaining, using terms, phrases and metaphors familiar to specific professions.

Story-telling was observed as a valuable means of sharing knowledge and experience in the critical care community. Bartunek *et al.* (2003) recognises language use in a CoP through stories and analogies as a way of learning and knowledge transmission, sharing tacit knowledge and building rich context. The way of telling narratives was linked by Wackerhausen (2009) as becoming part of a profession, and story-telling was additionally associated by Swanwick (2005) to enhance participation into professions, adopting professional behaviours, using professional artefacts and learning to 'walk the walk'. Language was therefore influential to IPL and the knowledge development of professions.

Participants in the current research associated friendly and open environments with increased IPL. Workplaces that regularly 'invite' learning increase the prospect of staff reaching their learning potential in everyday practice (RCP, 2018). Open environments had hierarchies and leadership approaches which did not deter IPL and they possessed an array of professional attributes that were affiliated with IPL, such as trust, respect and rapport that built therapeutic relationships between team members creating a foundation for IPL within the critical care community of practice.

9.5.3 Socialisation, Collaboration, and IPL

Collaboration as a human process recognises the dynamics between professions as equally important to the context of the situation (D'Amour *et al.*, 2005). The closeness of team members in critical care affected the level of collaboration leading to IPL. Therapeutic relationships and rapport built between colleagues was an external factor that affected learning opportunities (Huggins, 2004). Trust and respect were fundamental and affected interprofessional interactions such as decision-making

(Alexanian *et al.*, 2015), and enabled open interprofessional discussions (Van den Bulcke *et al.*, 2016). Frequent collaboration was needed to fully utilise the IPL opportunities available in critical care, and this required reinforcing social links that created therapeutic relationships between members of the CoP.

The CoP was reinforced when staff within critical care became familiar with each other. Socialising and interpersonal moments strengthened the sense of belonging to a team and this promoted IPL. Wagter *et al.* (2012) refer to the influence of homophily on IPL, as the similarities that people have, such as sharing spaces, goals, or tasks, promote IPL. Informal social networks build trust, and share knowledge, skills, and perspectives of different healthcare professions in a CoP; regular opportunities are needed for collaborative IPL to occur (Becker, 2007). The current study indicates that interprofessional networking improved IPL, and external networking at conferences and during formal education promoted IPL, as staff shared new knowledge on return to the critical care unit. Networking additionally highlighted differences in professional knowledge and educational experiences. This accentuated disparity in career routes and educational attainment for nurses and HCAs in the research and is linked to motivation for IPL (discussed further in 9.6.6 *Extrinsic Motivation for IPL*).

9.5.4 Psychological Safety and Learning from a Crisis

A key finding related to learning safety, and this linked to interprofessional trust and respect. Participants explained they needed to feel safe to ask questions that could be construed as ‘stupid’. Psychological safety was needed to ask questions to foster IPL in critical care and is defined by Torralba *et al.* (2016) as the feeling that staff can safely take interpersonal risks at work. With regards to learning in hospitals, Torralba

et al. (2016) explain that psychological safety can influence the clinical learning environment and Bynum and Haque (2016) define psychological safety as how the learning environment mitigates risks to learn, for example to enable doctors to feel safe enough to ask for help and engage with uncomfortable, but necessary, learning situations. Practices promoting psychological safety have been associated with improved interprofessional team interactions and collaboration (Ervin *et al.*, 2018). In the current study, participants spoke openly of their apprehension to ask questions that could be perceived as ‘stupid’ and psychological safety was valued as a fundamental attribute for IPL.

Situations that benefited from the presence of psychological safety, trust and respect, were emergencies. It was clear that when critical care staff experienced clinical emergencies, they would come together as a collaborative team, to work tirelessly towards their shared goal of saving the critically ill patient. Working together in a crisis required staff to be flexible, to manage the unexpected nature of the emergency. From a learning perspective, Hoffman and Donaldson (2004) describes this as having fluid patterns of learning, which shift in response to contextual change, as team members acclimatise to work flow, becoming time sensitive to work and learning. Consistent with the current findings, literature supports that clinical crises creates teamwork and collaboration (Alexanian *et al.*, 2015), although the current findings additionally observed professional exclusion in emergency working, and learning from events were not usually formally captured, as alluded to in previous discussions around reflection and debrief (see 9.4.10 *Interprofessional Simulation, Debrief and Reflection*).

IPL was positively associated with empowerment and preparation for emergencies. Findings identified how IPL was utilised to empower professions to make knowledgeable informed decisions in emergencies in the event that medical colleagues could be initially absent. This can be compared to Campbell *et al.* (2008) who describe how night nurses developed a 'preparedness for action', based upon experience and knowledge to promote the safety of patients. IPL could be utilised as a way of preparing for emergencies, for contingency planning and this enabled team members to proactively develop their knowledge from others, to recall for the benefit of applying it later to patient care in a crisis.

9.5.5 Disconnections and Intraprofessional Activity

Interprofessional interactions and collaboration in critical care are common, but are described as interprofessional work not interprofessional teamwork by Alexanian *et al.* (2015). Their findings suggest a lack of an interprofessional team in critical care practice, and Hawryluck *et al.* (2002) and Lingard *et al.* (2004) agree. The current research findings captured many instances of intraprofessional working, and in these moments IPL seemed absent. For example, critical care is described by Reeves *et al.* (2015) as busy, with staff often working intraprofessionally, in isolation on profession-specific tasks, preventing social interactions. Intraprofessional activity presented challenges for IPL and created disconnections in the environment.

Disconnections were further embedded when intraprofessional working was construed by participants as colleagues not being team players; this was observed in the current research. Non-team players create conflict within teams (Alexanian *et al.*, 2015). Interprofessional conflict has additionally been linked with differences in professional

knowledge and training, and the performance of the critical care team is dependent on conflict management, as well as effective coordination and consideration of organisational and environmental features (Ervin *et al.*, 2018).

In addition to intraprofessional practice, individuals often learned on their own unprofessionally and intraprofessionally within insular professional groups. Learning of this nature is perceived as a source for professional learning but it prevents collaborative IPL. Swanwick (2005) highlights that individuals can learn from formal sources, such as books, but recognises the additional need for social interaction with knowledgeable colleagues within a CoP. The link between collaboration and IPL is explained by Wackerhausen (2009). He states that professions working intraprofessionally in parallel does not represent 'genuine collaboration'. Whilst accumulatively the knowledge of multiple professions is greater than any single profession, it does not expand their knowledge or skills. He asserts that genuine collaboration expands knowledge and skills by learning relevant knowledge from other professions that extend beyond the reach of singular professions. Bartunek *et al.* (2003) describes this as 'knowledge leaks' between COPs, as knowledge flows across boundaries overcoming varying obstructions, as members share relevant vocabulary and ways of knowing.

The FICM & ICS (2019) believe that the culture, education, cohesiveness, leadership and working practices are influential to critical care teams and are of vital importance in shaping patient outcomes and staff well-being. Collaborative IPL is enhanced when individuals work together effectively in a CoP that promotes openness, psychological

safety, and trust, and that minimises disconnections that can occur through isolated practices and conflict.

9.6 *Situating Findings within the Literature: Humanising IPL*

The third overarching theme, *Humanising IPL*, recognises that being human and human behaviour influences IPL in critical care. Competence, informed by theory and practice, needs to blend evidence-based care with ethical decision-making and the complex needs of the patient, to link technical care to humanistic care (Scholes *et al.*, 2013). Galvin and Todres (2012) caution that the human dimensions of care can sometimes be obscured by technological and specialised focus, and they state that healthcare needs to be humanised and informed from a value base that recognises the depth and breadth of ‘being human’. Critical care staff therefore need to become competent and learn about being human in the specialised and technological critical care environment to humanise the care they give to others. The ethnographic findings indicated that the nature of being human shaped participation in IPL and when IPL was humanised and embraced the facets of being human, such as making mistakes and experiencing emotions, this promoted learning between critical care professions and enhanced IPL.

9.6.1 *Being Human in Critical Care*

Being human in critical care was a key finding in the ethnography and included making mistakes, making connections, showing personalities, human behaviour, the influence of motivation, and learning, managing, and adapting emotions. To situate these findings within current literature about humanising care, the humanising conceptual framework of eight dimensions developed by Todres *et al.* (2009) can be considered.

The conceptual framework provides eight philosophically based dimensions that guide care and interactions with a humanising focus (Todres *et al.*, 2009).

Galvin and Todres (2012) refer to a reciprocal relationship between qualitative research and their humanising value framework, indicating that their eight dimensions offer a framework to ‘judge’ humanisation features or to focus further research. The framework dimensions identified in table 9.2 span a spectrum of humanising and dehumanising features, and present ‘central aspects of what it means to be human’ (Hemingway, Scammell and Heaslip, 2012, p.26).

Table 9.2 Todres *et al.*’s (2009) humanising dimensions

Humanising	Dehumanising
Insiderness	Objectification
Agency	Passivity
Uniqueness	Homogenisation
Togetherness	Isolation
Sense Making	Loss of Meaning
Personal Journey	Loss of Personal Journey
Sense of Place	Dislocation
Embodiment	Reductionism

The findings from this ethnography can be considered from the perspective of Todres *et al.*’s (2009) humanising framework, and Galvin and Todres (2012) note that qualitative research is well suited to illuminate the complexity, depth, and breadth of situations that humanise care. The comprehensiveness of ethnography as a research methodology created a complex rich ethnographic account in this thesis that is constructed from extensive analysis of reflexive observations and interviews with

participants. As the third overarching theme, Humanising IPL recognises how critical care staff optimised their opportunities to learn together by embracing the humanising dimensions outlined in Todres *et al.*'s framework. For example, the findings presented in this thesis identify patient centred care as a driver for IPL, reinforcing the humanising framework which places patients at the centre of care (Hemingway, Scammell and Heaslip, 2012).

Within the framework dimensions, the ethnographic findings can be related to having a 'sense of place' as members of the critical care community of practice and the theme 'disconnections' can be related to the dimension of 'dislocation'. 'Togetherness', comparable to working and learning together in critical care rather than in isolation which presented barriers to IPL, reflects the influence of humanisation on IPL. Emotions, personality, and professional perspectives are illustrative of 'insiderness' and when professions were excluded from interprofessional interactions or learning, when there were hierarchies or knowledge differentials that inhibited IPL these can be related to the dehumanising dimension of objectification.

The research findings recognised that emergencies or crises in critical care negated participation in IPL, and this resonates with Todres *et al.*'s (2009) observation that in critical care environments there are moments when the technological aspects of patient care become the focus, but dehumanisation can occur when technological aspects of care overshadow humanising dimensions. The complexity of humanising healthcare presented in the humanising conceptual framework across a spectrum of dimensions is reflected in the ethnographic findings regarding humanising IPL, adding another research-based perspective to the existing knowledge base regarding humanising in healthcare.

9.6.2 Being Human and Making Mistakes

For critical care staff, being human means making mistakes which are influenced by personalities and connections made with others. Human error is prevalent in healthcare and literature into this area is extensive. The FICM & ICS (2019) emphasise the great potential for error in critical care, claiming that a critical care patient may need in excess of 200 evidence based decisions every day. The complexities of the treatment in critical care are heightened by the instability of patients, increased interprofessional interactions, polypharmacy and the extensive use of technology. Kiekkas (2011) agrees that high patient acuity in an increasingly complex environment is abundant with the potential for error, and humans become fallible when working conditions are cognitively complex, time pressured and information is limited. IPL offers potential to learn from mistakes.

Human factors, the scientific discipline exploring human behaviour, teamwork, equipment, environmental design and organisational function, has the goal of optimising performance and limiting harm (Ives & Hillier, 2015). The promotion of effective systems that are human friendly, which aim to reduce the margin of error, offer insight into situations where mistakes occur. There is scope for organisational learning through formal mechanisms and mistakes need to be reported through systems such as critical incident reporting, so that learning can happen by understanding the events that went wrong and establishing underlying causes, so that sustainable actions can be taken to prevent similar incidents occurring (NHS Improvement, 2014). The WHO (2017) claim that progress and learning around prevention of errors can be impeded by healthcare cultures that generate fear around reporting errors. Attempts to dissipate the blame culture towards a transparent culture that assumes accountability

for error has been enhanced by such drivers as the duty of candour, a statutory and professional requirement to report mistakes (GMC & NMC, 2015). This advocates that organisations need to support and encourage honesty and openness, and not prevent staff from raising concerns. Mistakes in healthcare are expected, and culture needs to promote transparency and organisational learning; participants in the current research advocated the value of reporting and learning from each other's mistakes.

Findings indicated that learning from mistakes was a largely independent reflective activity; however, there was value for IPL when the people who made mistakes shared the lessons they had learnt with others. As one doctor in the current study emphasised, once you make a mistake you learn for life, the error is not repeated in future practice and disseminating this knowledge through IPL is crucial to promote a safer culture. Participants claimed that, in addition to incident reporting, reflection and debrief (already discussed), formal mechanisms to aid learning from mistakes included appraisals and revalidation with professional regulatory bodies. These external drivers provided extrinsic motivation that could result in IPL. Group review of mistakes was possible within Morbidity and Mortality (M&M) meetings, however, these predominantly intraprofessional meetings resulted in missed opportunities for IPL across the wider team.

9.6.3 Personalities, Making Connections and Human Behaviour

Being human meant that individual personalities shaped the critical care team. Bynum and Haque's (2016) research found that doctors revealed their personalities when they felt safe within their team. This supports findings from the current research which indicated critical care staff would get to know each other and their personalities, which

improved collaborative IPL and humanised learning between staff. The personalities of leaders were particularly pertinent to IPL culture, and Laksov *et al.* (2015) indicates for example the personality of the head nurse affects the culture and climate of learning in the clinical environment. The influence of leaders in hierarchical positions was also found in this current research.

A noted human trait is the desire to make connections with others; in critical care these connections could be made through socialising or professional interactions. Staff in critical care strived to become integral to the group, and this process accelerated connections and fostered levels of IPL. Tuckman's group formation model provides insight into the human behaviour of critical care staff as they formed groups and learned to collaborate. The model reflects stages of group formation, as staff move through phases of building relationships and trust (forming), experiencing intergroup conflict and resistance (storming), developing cohesion and accepting individual personalities (norming), and working as highly functional teams that can flexibly adapt to effectively problem solve (performing) (Bonebright, 2010). The low temporal stability of the critical care team, exacerbated by the breadth and high turnover of interprofessional staff, promoted the importance of making connections with others to optimise team functioning, as inconsistent team members could render critical care teams unstable in the early stages of group formation. A lack of cohesion in the critical care team created challenges for IPL, therefore, to collaborate and learn effectively in transient teams, staff needed to make connections with others quickly and effectively to optimise the conditions for interprofessional working and learning in the intense and changeable environment of critical care.

9.6.4 Motivation for IPL

Human behaviour in critical care influenced IPL, and being motivated, feeling emotions, and using humour (discussed in 9.3 *Original Contribution to the Evidence Base*) were all influential. In the current study, motivation was key to IPL in several ways. Perceived levels of motivation by others affected how approachable a colleague appeared to learn with, it indicated their level of interest in subjects and this affected the depth of knowledge exchanged. Motivation was affected by extrinsic and intrinsic factors and was a driver for IPL opportunity and engagement.

Motivation is defined as the energy that underpins performance (White & Lowe, 2019). Regarding IPL, this can be construed as the energy invested in learning with others. Schunk (2009) describes motivated learning as the motivation to gain new knowledge and skills, as opposed to only completing tasks. These definitions explain why knowledge may be withheld during interprofessional interactions, if assumptions are drawn that suggest colleagues are task focused and lack energy or intention to learn. Marsick and Watkins (2001) exclaim that when motivation, need and opportunity are present, informal and incidental learning occurs. Swanwick (2005) suggests the interests and values of individuals in a social group affect their engagement with learning activities, and Huggins (2004) indicates that personal interest in a subject creates motivation to learn. These descriptions of motivation can account for the way that certain staff are approached for IPL in critical care based upon their perceived levels of motivation and articulated expressions of interest.

Hierarchy further influenced motivation for IPL, as research participants indicated that when leaders were interested in specific topics, their motivation to learn changed the

focus of critical care practice and leaders interest motivated learning across the interprofessional team, often with the introduction of new equipment and practices. Skule (2004) additionally adds that staff motivated to learn who have a strong interest in learning, tend to have ‘learning intensive jobs’. The complexity of critical care is indicative of rich and extensive learning; therefore, it is inherent that critical care staff need the motivation to learn frequently, in sufficient depth, across a range of subjects.

9.6.5 Intrinsic Motivation for IPL

IPL was affected by intrinsic motivation, defined by Schunk (2009) as engaging in tasks where the activity itself is the ‘means to an end’ rather than learning for a reward. Price (2013) recognises that staff motivation to learn can be affected by personal circumstances. Participants in the current study acknowledged that personal situations outside of work could prevent motivation for IPL, as staff became task focused and lacked the energy and capacity to learn with others because of stressful personal circumstances. IPL was viewed as extraneous to the primary role of caring for critically ill patients and their families when staff were overwhelmed, stressed, or fatigued.

White and Lowe (2019) consider the motivational theories of content theory, that explains human behaviour, and process theory, that considers how processes can influence a person’s effort in their performance of a task. From their perspective, intrinsic features of motivation include meeting individual needs, including belongingness, self-esteem, and self-actualisation. Critical care staff in the current study developed their self-esteem as they built confidence to seek knowledge from others, they described the sense of belonging to the critical care team and for some this

included feeling part of an extended work family, and regarding self-actualisation, staff were motivated to become competent practitioners to deliver safe holistic PCC.

9.6.6 Extrinsic Motivation for IPL

In addition to enhancing patient care, extrinsic motivation for IPL, with the purpose of achieving an outcome or reward (Schunk, 2009), can be linked to external influential factors, such as successful professional revalidation, competency achievement, qualifications from formal education or career progression with status and financial rewards. Rewards for learning are cognisant with process theory, such as Skinner's reinforcement theory of reward and punishment, and expectancy theory, wherein rewards influence human behaviour in terms of the effort invested in a task (White & Lowe, 2019). The current findings demonstrate how external goals directed staff towards IPL activities that could achieve the required outcomes set by others, as explained by goal-setting theory (White & Lowe, 2019). Motivation for IPL was therefore enhanced by extrinsic factors, however, when IPL opportunities were unavailable, motivated staff became disengaged and disheartened. This was most apparent in the current ethnography with HCAs. They shared frustrations and disappointment that their rewards and achievement were restricted by limits imposed by their professional role, and they indicated finances constrained them further, which prevented them becoming full-time students to undergo nurse training. Huggins (2004) notes that the extent of individuals' learning can be affected by finances, in addition to the relevance of skills, as well as the mood of staff and levels of interest.

Circumstances where a professional's motivation for IPL exceeded the opportunities available to them, risked disengagement from learning activities and could fragment the team, creating conflict, resentment, and job dissatisfaction. The morale of staff

declined if professional development opportunities were limited. Nurses were another professional group in the current research affected by IPL opportunities. Changes to funding streams and resource issues, such as staff shortages or poor skill mix, were cited as reasons that nurses had less access to IPL. Career progression and pathways for HCAs and nurses were ill defined and often did not relate to the qualifications or experience that staff held, unlike the clearly defined medical career pathways by contrast. The absence of IPL opportunities in critical care was constructed negatively by participants and Skule (2004) supports this by explaining that when learning is inaccessible in an environment, this can lead to stress and difficulty coping.

The physical environment of critical care affected motivation for IPL. Participants in the current research linked environmental conditions to their motivation, in addition to intrinsic and extrinsic factors. Working conditions, such as working at night, long shift patterns and environmental extremes, created fatigue and depleted staff of the energy needed to engage in IPL. For example, hot environments, with poor ventilation and limited opportunities for staff to rehydrate or nourish themselves, resulted in task focused approaches. Staff could not gain the motivation to initiate or engage in IPL under these circumstances and the focus of their motivation was to complete necessary work tasks. When critical care staff experienced fatigue or burnout, this was detrimental to the motivation required for IPL, and motivation is associated with the emotions invested by critical care staff.

9.6.7 Emotions and Learning in Critical Care

The current research captures the expanse of emotions experienced by the critical care team, providing context of the humanising effects on IPL. Different coping strategies were adopted by staff and the approaches chosen influenced the team as a whole. Staff

sought balance between professionalism and compassion, and often felt unprepared and untrained to manage the emotions that critical care evoked.

The intensity of critical care, as critically ill patients are treated to stabilise and reverse organ failure, often require crisis management. Brindley and Reynolds (2011) recognise that medical crises can cause ‘strong emotions’. Jackson *et al.* (2018) describe the toxicity of workplace adversity in the critical care environment, including unit culture relating to stigma around coping, experiencing feelings of powerlessness, guilt and moral distress, with the futility and tragedy of the nature of critical care. Highfield (2019) agrees that critical care is emotionally challenging, comprising complex decision-making, which has been conceptualised as experiencing emotional labour and moral distress.

Lindahl and Norberg (2002) state that critical care is complicated and emotionally demanding, requiring ‘very strong emotional energy’. Emotional labour, a term coined by Hochschild, conveys the emotional investment that people make as part of their daily work (Hochschild, 2003). Emotional labour accounts for a sizeable part of critical care and caring for critically ill patients and families expends significant amounts of emotional labour (Stayt, 2009). Moral distress is a term introduced by Jameton, defined as the psychological distress that arises from being in a situation that constrains action that a person knows is right (Jameton, 2017). These moments when staff experience moral conflict, often in relation to decision-making where staff perceive others decisions as morally wrong, can lead to burnout, increased staff turnover and staff leaving the profession (Gutierrez, 2005). In the current research, those in hierarchical positions were keen to empower the interprofessional team, leaders expressed value for interprofessional contributions to decision-making and team

members expressed frustration when their voice was unheard and professional contributions were excluded. Regarding IPL, emotional labour deprived staff of the motivation to learn from others, and moral distress created dissonance and professional conflict, which hindered interprofessional interactions leading to IPL.

9.6.8 Learning to Manage Emotions

With appreciation that critical care provision produces emotions within the team, insight into the way staff manage these emotions led to further understanding of a relationship with IPL. Jackson *et al.* (2018) propose that the impact of workplace adversity is dependent upon its duration and intensity, and awareness is needed before staff can manage their exposure to workplace stressors. Within the current research, critical care staff clearly described situations which caused emotional reactions, indicating astute levels of awareness for themselves and their colleagues. They adopted various strategies to manage emotions, which included hiding emotions, deflecting them, and disguising them. Participants explained these behaviours were used as coping strategies to avoid burnout and to enable them to continue to do their jobs.

Findings are consistent with Jackson *et al.* (2018), who found that critical care nurses developed cognitive and emotional barriers to protect themselves from workplace adversity, including using humour, detachment and disengagement. Akin to this current research, literature reveals a wide range of behaviours that critical care staff adopt to manage emotions. Lindahl and Norberg (2002) explain that critical care consumes emotional energy and results in carrying problems inside. Highfield (2019) emphasises that without a space that is safe and non-judgemental to process emotions, they can become displaced and need to be expressed later, manifesting as negative emotions in the workplace leading to aggression, passive aggression, or withdrawal

behaviours. Such behaviours create interpersonal challenges associated with workplace adversity, and Jackson *et al.* (2018) caution this can lead to conflict with interprofessional teams, professional roles and can reduce interprofessional respect in critical care. An absence of these features, which have been shown to promote collaborative IPL in critical care when present, is therefore detrimental to the IPL culture and climate.

Critical care staff are widely cited to process emotions through ‘venting’. The emotion-focused coping strategy is a way of minimising excessive stress and is defined as verbally expressing negative feelings and emotions to others (Burgess *et al.*, 2010). Hammonds and Cadge (2014) found that the most common way that critical care nurses negotiated emotional labour was by ‘venting’ and using relationships with colleagues to process complex emotions. Venting can be considered as informal debriefing, which Walker and Deacon (2016) describe as seeking support from colleagues after emotional events, at places such as nurse stations. Similarly, Henrich *et al.* (2017) found critical care staff would use venting to discuss their experiences with compassionate colleagues. This practice was observed during the ethnographic observation in this current research and highlights the spontaneous IPL practices that transpire in practice relating to emotional IPL in the absence of formal mechanisms.

Jackson *et al.* (2018) note the preference for informal group debriefs, which can occur in a timely manner after an event, rather than formally occurring days later. Conversely, formal venting can be considered as planned events that give rise to a supportive professional opportunity to process and learn about emotions. Participants in the current study, and in research presented in the literature, report feeling

unprepared for emotions, being untrained to manage and support others and feeling that insufficient formal opportunities to support emotional processing is problematic. Formal coping strategies to support emotional processing include interactive reflection such as clinical supervision (Lindahl & Norberg, 2002; Scholes, 2006), critical incident analysis and action learning sets (Scholes, 2006), debriefing (Henrich *et al.*, 2017; Walker & Deacon, 2016), MDTs to express emotions and build interprofessional relationships (Highfield, 2019), staff training and interprofessional case reviews (Burgess *et al.*, 2010) and observation of role models and simulation (Walker & Deacon, 2016). A number of system level improvements are outlined by Highfield (2019), including: using Schwartz Centre Rounds ® to offer space to review emotions associated with clinical ‘cases’, promoting psychological safety for staff to verbalise emotions, adopting supportive leadership that listens to staff, investment in resources and generating value for the team that rewards and celebrates the work that staff do.

The absence of opportunities to speak with colleagues about emotions could lead to critical care staff seeking support from families and friends (Highfield, 2019; Walker & Deacon, 2016). Participants in the current research often sought support from people outside of the critical care team. Literature clearly indicates that organisations have a responsibility to emotionally support critical care staff. For critical care staff to perform competently, their needs must be considered (Scholes, 2006). A team ethos of caring is needed (Walker & Deacon, 2016) and to provide emotional support to critically ill patients and families, organisations need to value staff for the emotional exertion this role subsumes (Stayt, 2009).

9.6.9 *Learning to Adapt Emotions*

The absence of an outlet to process emotions may lead to occupational stress and burnout (Stayt, 2009) and staff may leave the profession (Gutierrez, 2005). Henrich *et al.* (2017) found that when critical care staff experience burnout they describe it as feeling deflated, demoralised, and overwhelmed, and this influences their decision to leave their job. Conversely, critical care staff can learn to adapt in the emotionally demanding environment. In the current findings, staff learned how to support others emotionally and how to detach and distract as a means of coping with emotions, by watching and talking to others, by recalling personal experiences and through cognitive reflective processes. Burgess *et al.* (2010) note that critical care staff enact behaviour that creates distance to avoid stressors. Stayt (2009) refers to this behaviour as ‘self-preservation’, as critical care staff seek to avoid emotional sources of stress.

Over time, staff can learn to compartmentalise their emotions (Henrich *et al.*, 2017) and this can enable staff to effectively place their emotions ‘on hold’, so that they can perform their role with compassion and empathy (Highfield, 2019). This is a behaviour which Hochschild (2003) compares with Goffman’s presentation of self as staff strive to maintain a professional image (discussed in 9.4.5 *Impression Management and IPL*). Critical care staff can additionally learn to cognitively reframe emotions, enabling them to reflect and view emotions positively rather than negatively (Burgess *et al.*, 2010; Hammonds & Cadge, 2014). The current findings demonstrate the extensive effect that emotions can have on staff working in critical care and illustrates, supported by literature, how malleable and resilient staff working in critical care need to learn to become, to remain working within this speciality area.

Caring in critical care has been described as tragedy being met with compassion, guiding action and transforming despair into active energy (Lindahl & Norberg, 2002). Critical care units are places of intense uncertain work, that are emotionally arduous, often contradicting the norms of emotional management (Hammonds & Cadge, 2014). Staff working in emotionally consuming environments need to learn how to cope with the nature of critical care provision. Whilst literature has made associations with metacognition and reflection for critical care staff to manage emotions (Jackson *et al.*, 2018), the influence and opportunities for IPL have not been articulated. The presence of emotions in critical care is well-known, and the current findings further understanding, providing insight into the influence of emotions on IPL in critical care.

The IPL culture was seen to be most effective when it was safe to ask questions and when it was possible to admit where knowledge deficits existed. ‘Being human’ was viewed as pivotal for this to happen. Socialisation theory explains the importance of interprofessional social interactions in critical care; including humour and shared language and having a sense of shared identity with feelings of safety or belonging were instrumental in facilitating IPL.

Ethnographic findings in this thesis make an original contribution to knowledge relating to the field of IPL from the context of adult critical care (as presented in 9.3 *Original Contribution to the Evidence Base*). Findings additionally add to the current body of literature and move current understanding forward across sociological, psychological, and educational domains (as illustrated in sections 9.4-9.6 *Situating Findings within the Literature* for each overarching theme). Insight into the context of IPL in adult critical care has implications for practice, policy, and education, and this offers an amalgam of recommendations to shape the future of critical care practice.

9.7 Implications for Practice, Policy, and Education

Findings have implications for practice, policy and education, and research recommendations are listed in table 9.3.

Table 9.3 Research recommendations

The following practices are recommended to enhance IPL:
<ul style="list-style-type: none"> ○ Debriefs ○ Reflection ○ Insitu Simulation ○ Role models e.g. educators, leaders and IPL Champions ○ Professionally using humour ○ Notice boards to advertise IPL opportunities ○ Professional introductions
Practice implications:
<ul style="list-style-type: none"> ○ Technology should be evaluated for its effect on IPL ○ Moments for explicit IPL should be planned into daily practice ○ IPL can be used for preparation and contingency planning ○ Learner needs and motivation for IPL need to be articulated ○ The theoretical perspective of IPL can inform IPL practice ○ The model of IPL stages can support the learning process ○ Decision-making should include rationales ○ Influential factors for IPL can be used to evaluate IPL culture
Leaders can enhance IPL by:
<ul style="list-style-type: none"> ○ Giving staff feedback and praise ○ Being trained to promote IPL ○ Considering nurse-patient allocation and IPL needs ○ Humanising IPL
Organisations can support IPL by:
<ul style="list-style-type: none"> ○ Developing and celebrating IPL culture ○ Enabling professional networking ○ Expanding the workforce, integrating extended staff roles ○ Optimising environmental conditions for IPL ○ Identifying and creating designated learning zones
Policies may be informed with regards to:
<ul style="list-style-type: none"> ○ Defining IPL ○ Increased contextual insight of critical care IPL culture ○ Critical care building design, e.g. promoting staff visibility ○ Developing guidelines for the professional use of humour
Education can be improved by:
<ul style="list-style-type: none"> ○ Training staff to undertake debriefs and reflection ○ HEIs (Higher Education Institute) considering staff education in healthcare organisations ○ Aligning education and career pathways ○ Securing funding and supporting staff to attend formal education

Based upon the current research findings and literature reviewed, research recommendations have the potential to promote knowledge development of critical care staff, to improve critical care as an environment conducive to IPL, and this may enhance the quality of care for critically ill patients and their families.

9.7.1 Practice Implications

To sustain and improve IPL culture, opportunities to learn from other professions need to be embedded in daily critical care practice. Making time for IPL moments in everyday practice is needed, and regular opportunities for interprofessional interactions need to be made with the explicit intention of participating in IPL. Existing meetings and intraprofessional or uniprofessional learning activities may be extended to incorporate IPL, and this process can be enhanced if IPL is made an explicit goal. The RCP (2018) guidance to capitalise on workplace learning in healthcare, indicates the clinical need to integrate IPL activities into daily critical care practice.

Findings indicate the motivation of leaders and those interested in specific subjects influence IPL in an environment. The use of role models, educators, or designated IPL champions, may raise awareness of the benefits for IPL and could drive increased engagement in IPL within critical care, or potentially other healthcare areas.

Humanising IPL in critical care can be achieved by embracing the human aspects of working in the intensive environment. In line with legislation and professional regulatory body guidance that promote CPD and experiential learning, there is potential value in increasing the opportunities and processes to learn from mistakes. The value of raising awareness of the benefits of humour and the importance of emotions in critical care may additionally promote holistic IPL in the environment.

This may develop humanistic care skills that are a fundamental part of critical care provision (Scholes *et al.*, 2013).

Several recommendations can be made regarding the interprofessional workforce and the different bodies of knowledge they assume. Environments which had a workforce consisting of extended professional roles appeared to have enhanced levels of IPL. The findings from this current research suggest a positive relationship between the numbers of professions working together in critical care with participation in IPL. The insight into knowledge sharing practices from the findings indicate that individual learner needs and their motivation for learning should be established and clearly articulated to others, to remove assumptions and optimise knowledge sharing through IPL. The ability for staff to be clear about their learning needs may remedy the way professions manage the knowledge differentials that exist between professionals, by removing assumptions about knowledge levels and deficits.

Findings have implications for the process of patient allocation to named nurses during clinical shifts, and consideration of practitioner learning needs with regards to their location within the unit may benefit the IPL culture. IPL was affected by the stability and level of care provided to patients, the distance of staff from the central hub or nurse station and whether staff were positioned within cubicles. Based on the findings, nurses with recognised learning needs could benefit from being given a level 2 patient, where interprofessional presence can become increased with more frequent interactions often in relation to patient rehabilitation. Nurses with interprofessional learning needs should be placed close to the central hub to easily seek knowledgeable staff for IPL, and allocation to cubicles should be contemplated, because learning can become uniprofessional and constrained with varied interprofessional presence in closed rooms.

Valuable insight is offered into the context of the adult critical care environment; implications for practice relate to the use of space, the unit layout and the physical features of the environment. Physical environmental conditions can be controlled to optimise IPL. Providing staff sufficient breaks, easy access to drinking water and regulating temperature, all promote an environment conducive to IPL, where staff have the energy to motivate learning with others. Adjusting the intensity of light and maintaining appropriate noise levels to coincide with the interprofessional interactions on the unit and to reflect the time of day can enhance IPL. Suboptimal working conditions observed and reported by participants in the research, recognised within table 9.1 as influential factors, are potentially measurable and should therefore be modified within existing critical care units to optimise and promote the IPL climate.

The design of critical care layouts would benefit from clear lines of sight within the clinical area, reflecting the finding that visibility of staff is of greater importance to IPL than proximity. Critical care environments could also benefit from designated learning spaces. The findings recommend that all spaces in units have the potential for learning. This was demonstrated by the repurposing of spaces in critical care to areas with multiple functions that could accommodate staff learning on the unit. When used creatively, corridors offered great potential for IPL and this research therefore recommends that space in critical care is considered for its potential to learn in.

Practice recommendations can also be made with the use of artefacts in critical care. Notice boards are advocated as useful resources to advertise IPL opportunities, including professional networking and opportunities to socialise, that can build rapport and create connections between team members strengthening the sense of belonging in the CoP. Technology should be evaluated for its role in IPL and its use should be

contemplated if it replaces face-to-face communication that fosters rapport and builds therapeutic relationships that underpin IPL, and if it creates interruptions that are disruptive to interprofessional interactions and IPL. Mobile technology, such as computers mounted on wheeled units, and static furniture, such as tables and easels, are artefacts that bring staff together in a space, and are therefore beneficial additions to the critical care environment to promote learning between professions.

Findings generated theoretical insight into the IPL culture within critical care and can be used to develop knowledge and skills across organisations. The theoretical perspective of IPL culture that was constructed from consideration of the findings within the conceptual framework (figure 9.2), offers a theoretically informed standpoint to understand, shape and develop IPL culture. The three levels presented as components of IPL culture comprise the individual, team and organisation, and offer a theoretical perspective for staff to understand the facets that underpin the culture of IPL. Staff in practice can use the theoretical insight presented in the framework to develop their knowledge and skills as individuals, develop their capacity to work and learn within different teams, and to understand and develop the components of the wider organisation, which has the greatest hierarchical influence on culture.

A model of IPL stages (figure 9.3) is presented from the findings, and the four staged approach offers strategic insight into the confidence, knowledge and skill development of staff working within critical care as they develop expertise and competence. This model has implications for critical care practice and if applied as a guide to staff development, may enhance the robustness of IPL within critical care practice.

The research findings offer pragmatic and feasible recommendations to review and adapt practices within critical care to promote IPL.

9.7.2 Policy Implications

Local, national, and international policies may be influenced by the findings in this ethnographic research across fields of healthcare and interprofessional practice. Findings may inform future policy regarding critical care building design, national or international policy developments in the interprofessional field, organisational policies, guidelines, and frameworks for clinical practice.

Building design policies may be influenced by the research findings, optimising the environmental design of learning spaces in adult critical care. Critical care units are recognised as interprofessionally populated environments, that house and operate extensive equipment and technology, and space needs to be used creatively and efficiently. For example, lack of storage on critical care detrimentally affects IPL at the patient bedside of the unit, which was identified as the most prevalent place for IPL in the research.

Unused areas, such as corridors, could be designed to optimise the potential for interprofessional interactions and IPL. Carthey (2008) recommends that to promote informal interprofessional interactions in corridors, spaces could be equipped with ‘conversation nooks’, writing ledges or chairs, and purposefully designed to deter equipment storage but to promote informal meeting spaces. The finding that staff visibility is more influential with IPL than staff proximity, indicates that the layout needs to ensure that colleagues are visible as they work. Adaptable spaces, which can be segregated to form smaller working teams, gives staff the ability to adjust the intimacy of spaces. The future environmental design of learning spaces in adult critical care may be informed by the research; thereby creating space for IPL, and policies relating to the design of healthcare spaces may consider clinical areas as lived spaces

and potential zones for learning, in addition to their conceived space to function as areas that provide clinical care to patients.

The influential factors for IPL (table 9.1), can be used to review critical care environments from an IPL perspective. This may inform policy regarding formally optimising critical care as a learning environment. An IPL environment guide has been constructed from the analysed findings to recognise influential factors for IPL, offering a framework for staff to use within the critical care environment to optimise the IPL culture and climate (table 9.4).

Table 9.4 IPL Environment Guide

Embedding IPL	
Environmental conditions	<p>Is the temperature of the unit comfortable?</p> <p>Is there sufficient space to learn e.g. can staff learn near beds?</p> <p>Can light levels be controlled?</p> <p>Is it too loud for interprofessional teaching and learning?</p> <p>How far away is the nearest drinking source?</p>
Critical care layout	<p>How large is the unit? Do staff work in small teams?</p> <p>Are there designated learning zones?</p> <p>Where do groups of staff learn?</p> <p>Can staff be seen easily?</p> <p>Are staff located near each other?</p>
Ways of learning	<p>Which ways of learning occur?</p> <p>debrief, reflection, clinical supervision, coaching, MDT, M&M meetings, Schwartz Rounds ®, simulation, coaching, observation, competency training, in-house training, external courses, etc.</p>
Theory and training	<p>What training is given in the unit/organisation?</p> <p>Are staff sufficiently trained/qualified?</p>
Routines	<p>Where are the moments for IPL in the routines of the unit?</p>
External drivers	<p>What career pathways exist?</p> <p>How many staff have critical care qualifications?</p> <p>What support is there for CPD, revalidation and appraisals?</p>

Table 9.4 Continued

Collaborative IPL	
Leadership	Are leaders approachable for IPL? Does hierarchy prevent IPL? Do leaders provide feedback and recognition?
Knowledge levels	Are staff comfortable to articulate gaps in knowledge? Will staff openly identify learning needs?
Open atmosphere	Do staff feel safe to ask interprofessional questions? Are staff approachable for learning?
Networking	Are there opportunities for professional networking?
Familiarity	Do staff introduce themselves clearly? Are uniforms associated with professional roles?
Role models	Is there a staff member that leads learning? Who are the IPL role models?
Organisational support	Do leaders and organisations support IPL? Is a positive IPL culture part of organisational policy?
CoP	Do interprofessional staff have a shared vision? Is the working team considered to be a 'work family'? Are colleagues supportive and respectful?
Tension	What sources of conflict and tension exist?
Uniprofessional learning	Are there events that could become interprofessional? What opportunities are there to share independent learning?
Humanising IPL	
Being human	Is humour present? Is humour used professionally? Are staff trained to manage emotions? Are there support or learning strategies for emotions?
Motivation	What promotes or inhibits motivation to learn?

N.B. This theoretical guide has not been validated in practice

The ethnographic exploration of IPL in this thesis provides rich contextual understanding of the learning that occurs between critical care staff. This insight may inform future national or international policy developments in the interprofessional field of practice and research, and the IPL definition generated in this thesis may contribute to future published guidelines, such as the Khalili *et al.* (2019) discussion paper which currently omits to define IPL as part of the glossary of key terminology.

Organisational support is key to IPL culture, given that IPL culture and knowledge permeate down from organisational hierarchies and leaders. The findings recommend that organisations support IPL culture by celebrating the success of its staff, recognising the emotional labour intrinsic to healthcare roles, and offering praise and feedback that participants sought within the findings, to promote motivation for IPL, strengthening the CoP. Organisations may benefit from holding annual staff awards, offering funding for interprofessional conference attendance and nominating staff for national or international awards. Opportunities for IPL are enhanced from professional networking, in addition to socialising. Organisations may benefit from hosting regular interprofessional networking events, away days and team building events, and organisational policies should outline IPL support, providing resources and funding which could widen participation with external stakeholders and agencies.

The professional use of humour in healthcare might be a useful guideline that can reassure practitioners with respect to professional conduct. The research findings highlight the importance of humour to facilitate IPL in critical care, but staff exercised caution with its use; local guidance could further enhance the integration of professional humour into the workforce in adherence with professional regulatory body guidelines and informed by the evidence base.

9.7.3 Education Implications

Educational implications include developing professional training, simulation-based education, improving access to higher education and refining career pathways.

Staff in this study reported being untrained to formally manage emotions that arise from critical care work. Debrief training for critical care staff is a recommendation from this study, it is also indicated by the current literature reviewed in this thesis. Debrief training appears beneficial given the potential this process has to promote and enhance emotional IPL, and in view of the emotional labour and moral distress that critical care working involves. Leadership training is another aspect of practitioner development that can be enhanced with respect to IPL findings. Leaders influenced the climate and culture of IPL within critical care, and strong role models for IPL are required in the clinical field. Therefore, a recommendation is to articulate IPL as a goal in leadership training programmes, to enhance theoretical understanding of learning and interprofessionalism, and facilitate IPL within the clinical practice arena.

Interprofessional simulation offers great potential to enhance IPL, and knowledge and skills developed through simulation-based education are transferable to practice. Interprofessional simulation offers opportunity to raise awareness of pertinent issues, such as emotional labour, moral distress, psychological safety and interprofessional crisis management, which were features of the findings from critical care practice. IPL champions, coupled with designated time and space for IPL, would further facilitate interprofessional simulation in critical care as a means of promoting IPL culture.

Accessing external education and training was challenging for staff. One recommendation may be the provision of formal education from Higher Education Institutes (HEI) within healthcare organisations. The realisation of the absence of academics in the critical care environment highlights an opportunity to bring education to practitioners, rather than extracting clinical staff from the practice environment.

A final recommendation relates to the career pathways outlined across professions. HCAs and nurses within the study expressed frustration pertaining to poorly aligned career pathways. Work can be done in this area to align educational attainment with clinical practice development and policy, to create a career pathway for all professional groups. The pathway is needed to outline career progression, to provide extrinsic motivation and reward for professions to learn together, with the goal of continually improving knowledge and skills, promoting excellence in service provision and care.

9.8 *Strengths and Limitations*

The strengths and limitations of this study have been discussed in chapter three in relation to trustworthiness, from the qualitative perspective of credibility, transferability, dependability, and confirmability. The research has been designed to ensure that an ethical, reflexive, and robust approach was taken, and critique of the study provides insight and transparency of the research undertaken.

Table 9.5 summarises all aspects of the research that have been critiqued within the thesis.

Table 9.5 Strengths and limitations of the study

Strengths	Limitations
Transferability: 3 research sites promotes transferability of findings, offers rich description and accounts for differing cultures and subcultures.	Generalisability: Qualitative findings are not generalisable to wide populations but may be transferable.
Sample selection: Interprofessional participants are representative of the critical care team and offer divergent professional perspectives.	Sample selection: Participants interviewed volunteered; this may introduce bias. However, field observations included all staff on shift.
Data triangulation: Semi-structured interviews, field note observations, reflexive memos, and conceptual maps counter researcher subjectivity.	Researcher interpretation: Risks of subjectivity and limited by confinement to one professional domain.
Outsider position: Unfamiliarity with the research sites was promoted, reducing subjectivity & bias.	Outsider position: Observations were limited by access in the unit, and observations affect participant behaviour.
Insider position: Gives insight to the field of study, can understand shared language, can be easier to fit into a culture, gains participant trust.	Insider position: Makes viewing the familiar as strange a challenge, increases subjectivity with knowledge of the field of study.
One researcher: Promotes consistency with the research process, analytical coding by one person prevents different coding strategies, which arguably improves consistency.	Analysis limitations: Analytical coding by one person can limit breadth of interpretation. Supervisors analysed 5% of transcripts, to check coding and counter this.
Iterative approach: Data driven analysis, findings inform data collection and analysis, can check researcher interpretations.	Data collection: Ethnography produces large amounts of data; this takes time and skills to manage
Prolonged field observation: Offers stability of data collected and researcher becomes immersed in culture.	
Training: Researcher skills developed through engagement with Post Graduate training programme, NIHR GCP (Good Clinical Practice) training and ethnography training.	
Dissemination: All stages of the research have been disseminated regionally and nationally.	

Wackerhausen (2009) emphasises that no single profession is capable of studying a phenomena fully from within its professional domain because the phenomena extends beyond the ontological and epistemic reach of the individual researchers professional field. This introduces a potential limitation if the ethnographic data is interpreted from the researcher perspective, and represented subjectively (Leslie *et al.*, 2014). Van Maanen (2011) emphasises that ethnographers produce a fieldworker version of events, which are interpreted at the point of data collection, making analysis of ‘second-order’. Conversely, it could be contested that first-hand data obtained from observation is authentic and holistically representative of the bigger picture. Charmaz (2014) argues when ‘first-hand’ data is collected, the environment is seen, behaviour and interactions are observed and participant voices are heard, providing the context to support textual researcher interpreted data. Data was triangulated by using semi-structured interviews, field note observations and sketches, reflexive memos, iterative data collection and supervisor coding; this approach minimised researcher subjectivity and maintained the participant perspective in the ethnographic account produced.

Ethnography provides ‘rich data’, but the nature of ethnographic fieldwork is labour intensive in terms of the costs and time invested (Savage, 2000). The time consuming aspect of ethnography makes it a difficult methodology to undertake (Reeves *et al.*, 2013b) and there is the risk ethnographers can become too immersed within the field of study, a term referred to as ‘going native’. Spradley (1980) warns ethnography fieldwork undertaken with participant observation, increases the risk of researchers ‘going native’ and this increases subjectivity within the ethnographic account created. Adopting a partial participant approach in practice areas I was unacquainted with challenged this limitation; in addition to conducting the fieldwork with intervals of

several weeks between observations, four months allocated per research site, and having monthly supervision meetings to discuss progress and retain focus.

The research was designed across three research sites, with multiple professions and with me as the Principal Investigator. Piquette *et al.* (2009) believe that limiting research to one hospital potentially limits the transferability of findings to other fields of practice. Therefore, the inclusion of three critical care units enhances the overall transferability of findings. Including a range of professions within the study offered exploration of divergent perspectives and reflects the broader interprofessional staffing levels within critical care.

The method of observation presents both strengths and limitations to the study. Observations were limited by access and ethical appropriateness. As a staff study, patient and relative privacy was safeguarded and patient rooms were not entered during periods of observation. The position of observers also limit the range of observations possible, and the process of observation affects participant behaviour and engagement (Sheehan *et al.*, 2017). A strength of the study was being an outsider, and non-participation in clinical tasks clearly defined the researcher role in the environment.

9.9 *Summary*

This discussion chapter has presented an overview of research findings and identifies the influential factors for IPL that address the overarching research question (table 9.1). The aspects of the research that offer new insight and original contribution to knowledge have been discussed in section 9.3 (*Original Contribution to the Evidence*

Base) and the broader findings have been situated within current literature in sections 9.4-9.6 (*Situating Findings within the Literature: Embedding IPL / Collaborative IPL / Humanising IPL*), illustrating how the research findings advance current understanding from the context of IPL in adult critical care. Recommendations are made based upon implications for practice, policy, and education. The chapter closes with consideration of the strengths and limitations of the research. The conclusion chapter that follows considers the researcher experience from a reflexive standpoint, presents future areas for research, outlines the dissemination arising from the research and provides final thoughts regarding IPL culture in adult critical care.

CHAPTER 10: CONCLUSION

This final chapter concludes the thesis and considers researcher reflections, potential areas for future research, the dissemination of findings during the doctorate, closing with final thoughts regarding IPL culture in adult critical care.

10.1 Researcher Reflections

Reflexivity is key in ethnography, highlighting researcher influence, recognising and representing an ethnographer's relationship with their world of study and enabling consumers of the research to evaluate the researchers influence on the study (Reeves *et al.*, 2008). The concept of reflexivity is introduced in chapter four in terms of the researchers influence on data collection and analysis. Professional role conflict was alluded to in the discussion regarding ethics (section 4.5.3 *Professional Role Conflict*) and highlights the tripartite role I assumed during the fieldwork, as an academic, a researcher and a critical care nurse. The tripartite role became apparent by reflecting on participant behaviour in the field; Emerson *et al.* (1995) note that ethnographers need to be sensitive to, and perceptive of, the way they are seen and treated by others in the field of study. Each perceived role affected my integration in the research site and determined whether I was treated as an insider (emic position) or an outsider (etic position).

When perceived as a critical care nurse, I was placed as an insider to critical care. This role was largely unthreatening and often allayed participants concern over their use of language and critical care practices. Field note 2 captures an exchange where the participants became concerned that their use of language to describe a patient condition was misinterpreted. Familiar with the phrase, I was able to reassure the nurses that as

a fellow critical care nurse, I understood the inherent meaning to the language used and no misunderstanding had occurred. Generally, once staff in the study knew my critical care background, they would open up more and appeared to revert back to their more usual behaviour. Once viewed as a nurse, participants seemed to understand how to communicate with me and focus seemed to shift towards the research focus of IPL, rather than their suspicion that the research was about them as individuals:

“The NIC of night shift said a patient had “fallen off her perch overnight” to describe a deteriorating patient. The family were present, tired and sat around the patient bedside, but this comment was said far away from them, and quietly within context. The other NIC (day shift) looked uncomfortable and defended the terminology used by explaining its meaning. The colleague then looked worried and said “Oh...what did I say? Did I say something wrong?” I reassured them both that I shared their language as a critical care nurse myself and understood the place of ‘black humour’ to survive critical care. They both relaxed again and continued on with the next patient.”

Field Note 2

Being regarded as an insider by participants broke down barriers and enabled me to observe daily practices within critical care and to talk to staff about their thoughts and experiences. In a sense, it made me an honorary member of the team, although, Van Maanen (2011) asserts that ethnographers are never fully integrated into the communities they observe.

When regarded by participants as the researcher, or as the academic, I was positioned as an outsider and fieldwork experiences differed. Focus shifted from my research to my seemingly intrusive presence in the unit. High levels of negotiation were needed to continually integrate into the field to gain access to participants as they worked. Resistance was encountered, particularly by critical care leaders and those in hierarchical positions. Field note 14 gives an example of a consultant who had

expressed dissatisfaction with my presence, who had forgotten he had previously sent an email to the research sister in support of my research visits. I had been directed to a different ‘friendly consultant’ during the observation by a nurse and steered away from the consultant in the field note extract below, intimating that he was less receptive to outsiders and that the nurse predicted his behaviour:

“I approached the consultants and asked their permission to join them on the ward round. The ‘friendly’ consultant was very happy for this to happen but the other one appeared the opposite. He seemed angered that he “knew nothing about me” and “it would have been nice to have been informed”. I felt unsettled but managed to offer some degree of assurance by way of explaining I had posters up informing people research was taking place, had ethical clearance, had conducted an introductory visit already and had the observation schedule agreed in consultation with the ward manager and research sister. The consultant was still unhappy ...I tried to break the tension by saying that ...it was absolutely not a problem if I didn’t go on the ward round. He said “no: that’s not what I’m saying. You can come on the round, it would just have been nice to have been warned first”. Then he left the room leaving me feeling really uncomfortable and intrusive.”

Field Note 14

This reflexive account illustrates the challenges of repetitively negotiating access and consent for observation but indicates that the ethnographic research influenced me, and Coffey (1999) explains that whilst the person doing the research can affect the process, the fieldwork itself has a profound effect upon the researcher, which she describes as ‘personal, emotional and identity work’. The ethnographer role was challenging to undertake, it demanded high levels of adaptability to frequently negotiate access and gain consent from staff in the team, particularly when gaining access and consent for observation. However, it was also rewarding and was a position adopted with gratitude and appreciation for those who participated in the unfamiliar world of research. Additional examples of reflexivity are in appendix 12.

10.2 Future Research

This study invites further research into IPL culture in adult critical care, to improve the quality of care provided to critically ill patients and their families, and to continue to explore the holistic and humanising aspects of IPL within this complex care environment. The research raised a number of issues which could be explored further. Future research into the following areas would increase understanding:

- The relationship between organisational leadership and IPL in clinical practice
- The use of humour and its relationship to workforce development
- The environmental context of IPL to create IPL focused clinical environments
- The perception of critical care as an extended work family.

Future research would benefit from exploring these aspects to extend insight into the intricacies of working and learning within the context of adult critical care.

10.3 Dissemination

The focused ethnography has been widely disseminated over the course of doctoral study. Ten poster presentations, three workshops and three oral presentations were delivered at regional and national events to share various aspects of the research with academics, researchers, students and interprofessional practitioners. Various online platforms enabled international dissemination of my work. A table detailing the dissemination throughout the doctoral study is in appendix 13. Plans to disseminate findings in the future include publishing in peer reviewed journals and producing a summary report of findings to share with the research sites that participated in the research.

10.4 Final Thoughts

Adult critical care is complex, demanding high levels of staff knowledge and skills. As different professions collaborate to care for critically ill patients, frequent interprofessional interactions can lead to learning. Therefore, IPL was often present in critical care but many moments for IPL were missed or unrecognised. The rich analytical ethnographic account of IPL culture in this thesis shows the authentic practice of professions learning together in a community of practice towards the shared goal of providing safe, holistic, patient centred care to critically ill patients. The research findings show the intricacies of IPL culture in adult critical care and increase current knowledge and understanding of the field with the potential to promote knowledge and skills of the critical care team.

The conceptual framework situates IPL culture at levels of individuals, teams, and organisations, and following analysis, theoretical insight identified that the IPL culture permeated through hierarchical lines within the organisation. Whilst IPL culture was entrenched in critical care units, this did not account for variations in IPL participation which were affected by influential factors leading to a changeable holistic IPL climate. The influential factors identified in this research can promote IPL participation and with improved recognition of moments for IPL there is scope to apply these findings to critical care practice to optimise the IPL culture and shape the IPL climate.

Other key findings presented in this thesis include recognition of four stages of IPL: preparing, enquiring, acting, and sharing, that IPL improved with psychological safety to ask questions, IPL is holistic and being human influenced staff behaviour, collaboration, IPL, and humanised learning between professions. Knowledge

exchange was based upon assumptions of knowledge differentials, with less knowledge shared when the knowledge gap was greatest between staff. The IPL environment guide illustrates key features of critical care that influence IPL, such as the finding that visibility is more influential on IPL than proximity between staff, and each critical care department adapted spaces for IPL to occur. The CAUSE decision-making model represents how IPL is enhanced by providing rationales with instructions. Humour was a bridge to IPL; it was a complex nuance of critical care culture, affecting the workforce in many ways, and it could be developed through IPL. Disconnections between professions created barriers to IPL, and varied perceptions of critical care colleagues as a work 'family' were found.

Ultimately, IPL does happen in adult critical care units during frequent interprofessional interactions between knowledgeable and widely skilled professions. However, there is scope to improve IPL recognition and to promote IPL moments. This thesis provides a rich understanding of how critical care staff learn together and identifies influential factors which can promote or inhibit the IPL culture. Findings highlight great potential to enrich the knowledge and skills of critical care staff, and the IPL culture in critical care is presented as complex, collaborative, holistic, and humanising in nature. The healthcare organisation, its working teams, and individuals all shape IPL culture, and the richness of the ethnographic account offers a wealth of recommendations to enhance IPL in the context of adult critical care.

Critical care would benefit from increasing opportunities to embed IPL into daily practice, enhancing collaboration to promote learning opportunities, and recognising

the holistic and humanising aspects of IPL within the complex care environment. There is great potential to improve IPL within adult critical care.

When staff work and learn together, they create IPL moments which enhance the provision of safe, effective, holistic, patient centred care. IPL starts with an interprofessional moment:

“A waterfall starts but with one drop and look what becomes of that.”

(Kamen, 1992).

Appendices

Appendix 1: Ethics Approval Letter



*Professor Kathleen McCourt CBE FRCN
Executive Dean*

4 November 2014

This matter is being dealt with by:
Professor Pauline Pearson
Ethics Lead Department of Healthcare
Faculty of Health and Life Sciences
Coach Lane Campus Newcastle upon Tyne
NE7 7XA Tel: 0191 215XXXX

Dear Vikki

Faculty of Health and Life Sciences Research Ethics Review DHCPark290914
Title: An ethnographic study of the Inter-Professional Learning culture of NHS staff within the adult critical care clinical setting.

Following independent peer review of the above proposal, I am pleased to inform you that University approval has been granted on the basis of this proposal and subject to compliance with the University policies on ethics and consent and any other policies applicable to your individual research. You should also have recent Disclosure & Barring Service (DBS) and occupational health clearance if your research involves working with children and/or vulnerable adults.

For reference it was noted that the PIS does not describe the process of observation in depth. You might wish to consider whether individuals should be made more aware of what information will be recorded during observations and how they would go about opting out of this observation. It would also be helpful to include a section which clearly explains what will and won't happen if the individual opts out of the observation or does not want to participate in the interview.

The University's Policies and Procedures are available from the following web link:
<http://www.northumbria.ac.uk/researchandconsultancy/sa/ethgov/policies/?view=Standard>
You may now also proceed with your application to:

- NHS R&D organisations for approval. Please check with the NHS Trust whether you require a Research Passport, Letter(s) of Access or Honorary contract(s).
- You must not commence your research until you have obtained all necessary external approvals.

All researchers must notify this office of the following:

- Commencement of the study;
- Actual completion date of the study;
- Any significant changes to the study design;
- Any incidents which have an adverse effect on participants, researchers or study outcomes;
- Any suspension or abandonment of the study;
- All funding, awards and grants pertaining to this study, whether commercial or non-commercial;
- All publications and/or conference presentations of the findings of the study.

We wish you well in your research endeavours.

Yours sincerely

Pauline Pearson

Professor Pauline Pearson
Ethics Lead for Healthcare, on behalf of the Faculty Research Ethics Review Panel

Appendix 2: Consent Form for Observation

IRAS number: 171128 Document version 1 Date: 17th August 2015



INFORMED CONSENT FORM

Project Title: AN ETHNOGRAPHIC STUDY OF THE INTER-PROFESSIONAL LEARNING CULTURE OF NHS STAFF WITHIN THE ADULT CRITICAL CARE CLINICAL SETTING

Principal Investigator: VIKKI PARK

*please initial
where applicable*

I have carefully read and understood the Participant Information Sheet.

☐

I have had an opportunity to ask questions and discuss this study and I have received satisfactory answers.

☐

I understand I am free to withdraw from the study at any time, without having to give a reason for withdrawing, and without prejudice.

☐

I agree to being observed by the researcher in my daily working practice in critical care and I agree that notes can be taken based upon my working practice.

☐

I agree to the use of anonymous extracts and results from the study to be published in reports and journals, and for findings to be shared through presentations.

☐

I agree to take part in this study and provide my contact details below.

Email address.....

☐

Signature of participant..... Date.....

(NAME IN BLOCK LETTERS).....

Signature of researcher..... Date.....

(NAME IN BLOCK LETTERS)..... VIKKI PARK.....

One signed copy of this form to be given to the participant and one to be retained by the researcher.

Appendix 3: Consent Form for Interviews

IRAS number: 171128

Document version 1

Date: 17th August 2015



Faculty of Health & Life Sciences

INFORMED CONSENT FORM

Project Title: AN ETHNOGRAPHIC STUDY OF THE INTER-PROFESSIONAL LEARNING CULTURE OF NHS STAFF WITHIN THE ADULT CRITICAL CARE CLINICAL SETTING

Principal Investigator: VIKKI PARK

*please initial
where applicable*

I have carefully read and understood the Participant Information Sheet.

☐

I have had an opportunity to ask questions and discuss this study and I have received satisfactory answers.

☐

I understand I am free to withdraw from the study at any time, without having to give a reason for withdrawing, and without prejudice.

☐

I agree to have my interview audio recorded in this research study. I understand that I may ask for the recording to be stopped at any time.

☐

I agree to the use of anonymous extracts and results from the study to be published in reports and journals, and for findings to be shared through presentations.

☐

I agree to take part in this study and provide my contact details below.

☐

Email address.....

Signature of participant..... Date.....

(NAME IN BLOCK LETTERS).....

Signature of researcher..... Date.....

(NAME IN BLOCK LETTERS).....VIKKI PARK.....

One signed copy of this form to be given to the participant and one to be retained by the researcher.

Appendix 4: Participant Information Sheet

IRAS number: 171128 Document version 2 Date: 17th August 2015



Faculty of Health and Life Sciences
Coach Lane Campus
Northumbria University
Newcastle upon Tyne
NE7 7XA

PARTICIPANT INFORMATION SHEET – An ethnographic study of the Inter-Professional Learning culture of NHS staff within the adult critical care setting

Invitation to participate

You are invited to take part in a research study as part of my Doctorate studies. Before you decide to take part it is important for you to understand why this research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask me if there is anything not clear to you or if you would like more information please do not hesitate to contact me. Once you have read this information please take time to decide whether or not you wish to take part.

Thank you in advance for taking time to read this document.

What is the purpose of the study?

This study intends to explore Inter-Professional Learning (IPL) occurring within adult critical care settings. For the purpose of this study the following definitions have been developed:

*Adult **Critical Care** refers to the complex and acute care provided to adults, with single or multiple organ failures, who are cared for **within** the Critical Care Department and there should be the prospect of recovery or improvement in the patients' condition at the time of their admission.*

Inter-Professional Learning (IPL) refers to learning which happens between different occupational groups through the collaborative sharing of expertise, knowledge and experience.

The research aims to explore your perspectives of IPL within the working environment of critical care. Whilst the training of health professional students often utilises IPL, and there is an increasing body of literature to support the benefit of this, there remains a lack of literature relating to IPL within adult critical care services. I am particularly interested in this area since it reflects my previous clinical background as a critical care nurse.

Appendix 4 (continued) Participant Information Sheet

One of the best ways to find out about a phenomenon is to observe it first hand; therefore, I will be undertaking an ethnography (a form of research designed to observe and understand other's culture). This will involve me undertaking observations and conducting interviews.

(1) Undertaking observation of clinical practice within the setting of adult critical care.

The observation will focus on the learning which occurs between different NHS staff who are working in your Critical Care Department and it is expected to occur in short intervals over a total period of 4 months.

(2) Interviewing you on a one-to-one basis to find out more about your views and experiences on the subject of IPL.

Each staff member invited for interviews will only attend one interview. It is expected to last around an hour and will take place in a confidential setting within the hospital where you work.

It is envisaged that the study will generate an increased understanding and thereby awareness of IPL in adult critical care services and contribute to knowledge in this area.

Why have I been asked to take part in the study?

You have been chosen because you are currently working in health care within the critical care department which has been chosen for the research study. Your views are important to this study.

Do I have to take part in the study?

No. It is entirely voluntary to take part in this study.

It is therefore up to you to decide whether to take part or not. Any questions you might have can be answered by me (the researcher) or any of my research supervisors (see below for contact details) and if you do not want to take part your decision will be respected. If you are chosen to be interviewed for this study you will be asked to sign a consent form to show you have chosen to take part voluntarily and that you have been made aware of the purpose of the research. At any point in the study you are still free to withdraw at any time and you do not need to give a reason for this. Your information will be kept confidential throughout the process and discarded confidentially if and when required.

Appendix 4 (continued) Participant Information Sheet

If I do want to take part what happens next?

Along with this information sheet you will also receive a study invitation card which has my postal and email address on it. If you wish to help with this study and be involved with interviews please follow the instructions on the invitation card and contact me to express your interest.

The doctorate research has certain criteria to meet to ensure a range of individuals are interviewed. Please note that not all those who express an interest will be invited to take part. I will let you know whether you have been recruited to the study via the contact details you provide.

If you have been selected, a mutual time and place will be arranged to conduct the interview and it is expected to last no longer than 1 hour. The discussion will be recorded with a digital voice recorder, and your permission for this will be gained at the beginning of the interview.

What are the possible benefits of taking part?

There can be no assurances of direct or immediate benefits to you if you contribute to this study. However, the information you provide will help to increase understanding of Inter-Professional Learning within adult critical care settings and this will add to a body of literature which currently lacks knowledge and insight about IPL in critical care practice.

What are the possible disadvantages and risks from taking part?

Discussing your personal experiences of working and learning with colleagues within critical care settings may raise sensitive issues. Please be reassured that your conversation will be held in the utmost confidence and data will be held securely and anonymously.

Please note that as an NMC registrant I have a duty of care to patients and service users receiving care and treatment (NMC 2015). As such, if any issues of safeguarding or poor practice are revealed during discussion appropriate policy will be adhered to in order to ensure the needs of patients and staff are adequately met.

Where will be the research take place?

The research will take place at the hospital in which you work. If you agree to participate in the study, a mutually convenient time will be negotiated with you to conduct interviews.

Appendix 4 (continued) Participant Information Sheet

Will my taking part in this study be kept confidential?

Yes. All information will be stored confidentially, securely and anonymously within locked filing cabinets for any handwritten notes and password protected computer software for digital recordings or typed files. Your name and place of work will not be traceable and codes will be used to ensure you cannot be directly linked back to the original information you have given. The doctoral study is due to complete in December 2017. Once all data has been analysed and the PhD completed all data will be confidentially destroyed 3 years after the official point of completion. Only the main researcher can directly access the data.

What will happen to the results of the research study?

At the end of the study, all participants will be sent a summary report of the findings and if specifically requested, a full report can be forwarded. It is intended that the findings will be disseminated to the critical care teams, communicated through any relevant forums related to Critical Care settings and through journal publication and conference presentations. The research findings will also be written at length within the PhD thesis produced to support the Doctorate study. With your permission, anonymous quotes may be used to illustrate the study's findings. You will not be identified in any report or publication arising from the study.

Who is organising and funding the study?

The study is being conducted by Mrs. Vikki Park, Senior Lecturer in Adult Nursing at the Faculty of Health and Life Sciences, Northumbria University. The study is the focus of Doctorate research and this has been funded and supported by Northumbria University.

Who has reviewed the study?

Ethical approval has been granted from the ethical review boards at the Faculty of Health and Life Sciences at Northumbria University, as well as the Research and Development Department within the NHS Trust within which you work. No research will be undertaken without appropriate ethical approval.

For further information about this study please contact Vikki Park - telephone number -
email address - Faculty of Health and Life Sciences, Coach Lane Campus, Northumbria
University, Newcastle upon Tyne, NE7 7XA

Thank you in advance for your interest in this study & for taking the time to read this.

Additional Points of Contact:

Amanda Clarke (<i>Principal Supervisor</i>)	telephone number	email address
Lesley Durham (<i>Supervisor</i>)	telephone number	email address

There is research currently taking place in this area

Please be aware there may be research occurring within this Critical Care Department.

Why?

The research is being done to find out about the learning which takes place between NHS staff in Critical Care.

Who?

The research will involve NHS staff working in Critical Care.
It will not involve visitors or patients.

Your Rights

Ethical approval has been granted for this project and if you do not wish to participate within this research it is your right to withdraw from it.

Who do I contact?

If you have any further questions please refer to the Participant Information Sheet or you can contact the following people:

Vikki Park (*Main Researcher*)
telephone number -email address


Amanda Clarke (*Principal Supervisor*)
telephone number -email address

Lesley Durham (*Supervisor*)
telephone number -email address

The Nurse in Charge of the Department may also provide you with additional information.

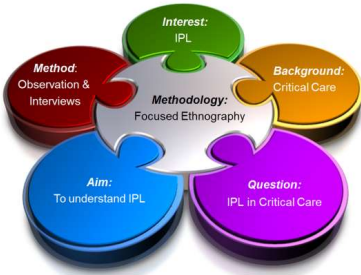
Appendix 5 (continued) Research Posters

Dissemination Poster of Research Design



Inter-Professional Learning in Adult Critical Care

Vikki Park



References:

Cruz, E.V. and Higginbottom, G. (2013) The use of focused ethnography in nursing research *Nurse Researcher* 20 (4) pp.38-43

Hammersley, M. and Atkinson, P. (1997) *Ethnography: Principles in Practice* 2nd edn. Routledge

Reeves, S., Zwarenstein, M., Goldman, J., Barr, H., Freeth, D., Hammick, M., and Koppel, I. (2009) Interprofessional education: effects on professional practice and health care outcomes (Review) *The Cochrane Collaboration Issue 1 The Cochrane Library*

Reeves, S., Kuper, A., and Hodges, B.D. (2008) Qualitative research methodologies: ethnography *British Medical Journal* 337 (7668) pp.512-514

Rothschild, J.M., Landrigan, C.P., Cronin, J.W., Kaushal, R., Lockley, S.W., Burdick, E., Stone, P.H., Lilly, C.M., Katz, J.T., Coador, G.A. and Bates, D.W. (2005) The Critical Care Safety Study: The incidence and nature of adverse events and serious medical errors in intensive care" *Critical Care Medicine* 33 (8) pp.1694-1700

Research title

An ethnographic study of the Inter-Professional Learning culture of NHS staff within the adult critical care clinical setting.

Background

Critical care is acknowledged as a complex and fast-paced care environment (Rothschild et al. 2005). The intensive level of patient care results in frequent interactions between different professional groups, therefore potentially increasing opportunity for collaborative practice and Inter-Professional Learning (IPL) to occur in this particular clinical setting. A body of evidence is accumulating to support the potential benefits to patients, staff and organisations as a result of Inter-Professional Learning through interprofessional education and collaborative practice (Reeves et al. 2009). However, research into Inter-Professional Learning within the specific area of critical care is limited. My research aims to explore this further.

For the purpose of this study IPL is defined as:

- Learning which happens between different occupational groups through the collaborative sharing of expertise, knowledge and experience.

Research Design

Aim

- To understand Inter-Professional Learning occurring within the specific culture of adult critical care.

Objectives

- To develop a rich description of the Inter-Professional Learning culture in adult critical care clinical practice.
- To understand in-depth critical care practitioners' perceptions and experiences of Inter-Professional Learning within adult critical care clinical practice.
- To identify which factors are perceived to promote or inhibit effective Inter-Professional Learning.

Methodology

A naturalistic qualitative approach will be adopted using ethnography to observe the interprofessional interactions of NHS critical care staff which may present learning opportunities within their natural setting, and in their 'natural state' (Hammersley and Atkinson 1997). 'Ethnographic research aims to provide rich, holistic insights into people's views and actions as well as the nature of the location they inhabit through the collection of detailed observations and interviews (Reeves et al. 2008 p.512).'

Focused ethnography has been chosen, also known as micro-ethnography, to focus upon one distinct issue within a culture in specific settings (Cruz and Higginbottom 2013). Using focused ethnography the distinct issue of IPL will therefore be explored specifically in adult critical care settings.

Method

● Stage I:	Partial-participant observation	● Stage II:	Interviews
● Sample:	Three adult NHS critical care units	● Sample:	n= 4-12 per critical care department
	All professionals within the environment		4 occupational groups: Nurse, Doctor, Health Care Assistant, Physiotherapist
● Duration:	Observations spanning 4 months per unit	● Duration:	Individual interviews < 1 hour

Coming to a Critical Care Unit near you?

It is proposed the research will take place within three units within the North of England and the research is currently undergoing stages of ethical approval.

For further information please contact: Vikki Park, Senior Lecturer, Northumbria University, Faculty of Health and Life Sciences vikki2.park@northumbria.ac.uk



Document Version 2 Supervisors: Amanda Clarke, Alison Machin & Lesley Durham Date: 13.10.2014

This poster was disseminated at various national and regional conferences to raise awareness of the research design and to facilitate access into the field of research.

Appendix 6: Participant Information Cards



Participant invitation card for publicity

FOLDED

Study title	An ethnographic study of the Inter-Professional Learning culture of NHS staff within the adult critical care setting.	For additional information about the research please refer to the Participant Information Sheet or contact the researcher for further details.
Purpose	To understand Inter-Professional Learning between NHS staff in adult critical care.	Researcher Details Mrs. Vikki Park Faculty of Health and Life Sciences Coach Lane Campus West Northumbria University Newcastle upon Tyne NE7 7XA Tel: (0191) 215 6249 Email: vikki.park@northumbria.ac.uk  Version 1: 17.8.2015
How	Observation of practice and interviews.	
Participation	Ethical approval has been granted. Interviews – consenting volunteers are needed. Observation – staff can opt out at any time.	
Researcher & Funding	Main researcher – Vikki Park as part of her PhD studies. 	

Participant invitation card for interview

FOLDED

 <div style="text-align: right; border: 1px solid black; padding: 2px;">Version 1: 17.8.2015</div> <p style="text-align: center;">Invitation Card <i>for the study</i></p> <p style="text-align: center;">An ethnographic study of the Inter-Professional Learning culture of NHS staff within the adult critical care setting</p> <p>Dear Clinical Colleague,</p> <p>I am a researcher from Northumbria University at Newcastle and am interested in your views and experiences about Inter-Professional Learning within adult critical care settings. You are invited to participate in this study if you so wish.</p> <p>More detailed information about the study and what it would involve for you is provided in the "Participant Information Sheet". Please take the time to read through the information sheet carefully. You are welcome to ask me further information regarding this study; you can contact me directly using the contact details below.</p> <p>If you agree to take part in the study, please complete the back of this card and return to me using the attached addressed pre-paid envelope. I will then contact you as soon as possible.</p> <p>Yours sincerely</p> <p><i>Mrs. Vikki Park</i> Senior Lecturer, Northumbria University, Faculty of Health and Life Sciences, Coach Lane Campus West, Newcastle Upon Tyne NE7 7XA tel:(0191) 215 6249 email: vikki.park@northumbria.ac.uk</p>	 <p style="text-align: center;">Acceptance Card <i>for the study</i></p> <p style="text-align: center;">An ethnographic study of the Inter-Professional Learning culture of NHS staff within the adult critical care setting</p> <p>Dear Vikki,</p> <p>I am interested in taking part in the research study to share my views about Inter-Professional Learning within adult critical care settings.</p> <p>I understand that I will be contacted shortly to arrange a convenient time and place for an interview to participate in this study.</p> <p>Name: _____ Signature: _____</p> <p>My preferred method of contact is:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="padding: 2px;">Phone</td> <td style="padding: 2px;">Post</td> <td style="padding: 2px;">Email</td> </tr> </table> <p style="text-align: center;">(Please circle which is preferable)</p> <p>My contact details are:</p> <p>Any additional information or questions may be added here:</p>	Phone	Post	Email
Phone	Post	Email		

Appendix 7: Participant Letters

Participant letter for interview



Faculty of Health and Life Sciences
CSC002, Clinical Skills Centre
Coach Lane Campus West
Northumbria University
Newcastle upon Tyne
NE7 7XA

<p>PARTICIPANT INVITATION LETTER – An ethnographic study of the Inter-Professional Learning culture of NHS staff within the adult critical care setting</p>
--

Dear clinical colleague,

Research to undertake an ethnographic study of the Inter-Professional learning culture of NHS staff within the adult critical care setting

I am a Senior Lecturer at Northumbria University and I am undertaking a piece of research as part of my Doctorate studies (PhD). I am writing to you to ask if you would be willing to take part in this research. The project aims to find out your views and experiences of Inter-Professional Learning (IPL) in adult critical care. I hope that the study will enable me to better understand the concept of IPL and to see how different NHS staff work and learn together in the clinical practice area of adult critical care.

In order to carry out the research, help is needed from the clinical staff who work within this clinical setting and your help would be very much appreciated.

Before you decide whether or not to take part in the study, it is important that you understand why the research is being done and what you need to do. Please take time to read the enclosed "Participant Information Sheet" carefully.

If, after reading the "Participant Information Sheet", you decide you would like to take part, please read and sign the enclosed 'study invitation card'. Please, only complete these forms if you are willing to take part in a one-to-one interview with me to discuss the concept of IPL. If you are happy to take part, please initial the box to consent to the researcher contacting you to make further arrangements and provide your contact details where indicated. The signed "Study Invitation card" should be posted to me at Northumbria University using the reply-paid envelope provided (no stamp is required). Please note that only signed responses will be used.

If you have any questions please contact me, Mrs. Vikki Park, at Northumbria University. You can contact me by telephone on xxxx or by e-mail at xxxx.

Thank you for considering taking part in this study. I look forward to hearing from you.

Yours sincerely, Mrs. Vikki Park

Appendix 7 (continued) Participant Letters

Thank you letter acceptance for interview



Faculty of Health and Life Sciences
CSC002, Clinical Skills Centre
Coach Lane Campus West
Northumbria University
Newcastle upon Tyne
NE7 7XA

**THANK YOU LETTER – An ethnographic study of the Inter-Professional Learning
culture of NHS staff within the adult critical care setting**

Dear clinical colleague,

**Research to undertake an ethnographic study of the Inter-Professional Learning
culture of NHS staff within the adult critical care setting**

Thank you for indicating your interest in taking part in the above study. In the “Participant Information Sheet”, it was mentioned that 4 different NHS staff from your clinical environment of adult critical care would be invited into the study for interviews. I am pleased to inform you that you have been selected for the interview as part of this research study.

You will be contacted again soon to arrange a convenient time and place to undertake the interview. Following the interviews, and at the completion of the study, a report will be produced in line with the research findings which will be disseminated into your clinical area.

Thank you again for your interest.

Yours faithfully,

Vikki Park

Main Researcher

Appendix 7 (continued) Participant Letters

Thank you letter declined interview



Faculty of Health and Life Sciences
CSC002, Clinical Skills Centre
Coach Lane Campus West
Northumbria University
Newcastle upon Tyne
NE7 7XA

**THANK YOU LETTER – An ethnographic study of the Inter-Professional
Learning culture of NHS staff within the adult critical care setting**

Dear clinical colleague,

**Research to undertake an ethnographic study of the Inter-Professional Learning
culture of NHS staff within the adult critical care setting**

Thank you for indicating your interest in taking part in the above study. This letter is to let you know that you have not been selected to be interviewed: the staff chosen have been selected purposively to fulfil certain inclusion criteria, such as their professional group.

However, a report will be produced on the study's findings upon completion of the study, which you will be able to access because it will be disseminated into your clinical area.

Thank you again for your interest and contribution so far in the study.

Please note that any identifiable information I hold about you will be destroyed to maintain your confidentiality.

Yours faithfully,

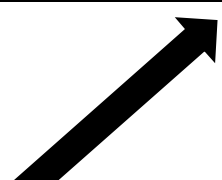
Vikki Park

Document version 1

Date: 17 August 2015

Appendix 8: Observation Template

Space	Light	Noise	Actor	Act	ActiVity	Event	Object	Time	Goal	Feelings
-------	-------	-------	-------	-----	----------	-------	--------	------	------	----------




Nine major dimensions of the social setting	Extended dimensions applied
• Space: the physical place or places	- light: artificial, natural, levels
• Actor: the people involved	- noise: levels, type, duration
• Activity: a set of related acts people do	
• Object: the physical things that are present	
• Act: single actions that people do	
• Event: a set of related activities that people carry out	
• Time: the sequencing that takes place over time	
• Goal: the things people are trying to accomplish	
• Feeling: the emotions felt and expressed	<i>Spradley (1980) p.78</i>

DATE:

REFLECTIONS


FIELD NOTE OBSERVATIONS ENTERED HERE IN THE BLANK SPACE

Research Aims



Space intended for reflexive comments.

N.B. This area was removed and reflexive comments were integrated into the observation field notes.



AIMS	Describe IPL in CC	Understand staff perceptions & experiences of IPL in CC	Identify factors which promote or inhibit IPL in CC
------	--------------------	---	---

Appendix 9: Interview Topic Guide



Faculty of Health and Life Sciences
CSC002, Clinical Skills Centre
Coach Lane Campus West
Northumbria University
Newcastle upon Tyne
NE7 7XA

<p>Interview Topic Guide – An ethnographic study of the Inter-Professional Learning culture of NHS staff within the adult critical care setting</p>
--

1). Introduction

- ☐ Hello ...<name>... thank you for agreeing to talk to me today. My name is Vikki Park and I have invited you here today because I am doing some research as part of my PhD Doctoral studies looking at the concept of Inter-Professional Learning within adult critical care settings. There is very little research on the area of IPL in critical care and I am hoping to explore this further by talking to people who work in these clinical settings to hopefully find out peoples experiences and perceptions of it.
- ☐ It's probably a good time to mention housekeeping issues and to my knowledge there is no planned fire drill expected today. The nearest fire exit is locatedand toilets are available I have brought along a digital voice recorder which I will use to record our conversation today. This is to help me to remember more details from our discussion, particularly during the data analysis phase of the research.
- ☐ All of our discussion today will be kept confidential and your contribution is voluntary. If you feel you need to, you can withdraw at any point and you can also ask for the voice recorder to be turned off at any point as well. Any written notes I make during our discussion will reflect any thoughts or ideas I have or they will include keywords and phrases that will help me to remember topics discussed. All collected information is considered to be data and this will be kept safely and securely to ensure confidentiality. All information will be transferred into an electronic format and stored securely at the earliest opportunity.
- ☐ Do you have any questions or comments before we start our discussion?

Document version 1

Date: 17 August 2015

Appendix 9 (continued) Interview Topic Guide

2). Interview GRAND TOUR QUESTION

My research is about the learning that takes place between different staff in critical care and I am very interested in people's experiences and thoughts about this in clinical practice. I'm pleased you could come today and it would be great if you can tell me what it is like working in critical care.

[Planned Prompt]:	Tell me about your role and background in critical care.
[Specific Tour]:	Can you tell me about the ways you think people learn best in critical care?
[Planned Prompt]:	I have mentioned Inter-Professional Learning. What does this term mean to you?
	What are your experiences of the way different healthcare staff learn in critical care?
[Example Question]:	Can you give me an example, which involves learning from your critical care colleagues?
	I would like to hear more about how you learn with other staff in critical care
[Planned Prompt]:	Can you tell me what you think the benefits are of learning together with other professionals?
	Which, if any, barriers or challenges are there in relation to learning with other colleagues?

3). Closing

- ☐ 'The interview is nearly finished. Are there any other points you would like to add before we finish and I turn off the audio recorder?'
- ☐ 'Thank you for taking the time to talk to me today. Your contribution to the research is very much appreciated. All your information will be used confidentially and you can contact me at a later date if you would like more information about the research. Thank you.'

Appendix 10: Examples of Analysis

To aid iterative analysis, key data from previous observations and interviews were summarised on a sheet of paper, this informed interview discussions along with the interview topic guide and informed ongoing data collection and analysis. Additional notes were also captured during interviews to keep the conversation flowing and on point. All observations and interviews were transcribed, and phenomena were coded to explore cultural patterns. Following transcription, the first stage of analysis was to code transcripts by hand. Two supervisors additionally analysed 10% of the data and conceptual maps were used to organise interpreted findings. Findings were incorporated into candidate themes and a research poster was created of these early findings which was disseminated at a regional and a national conference.

The second analysis of data was done with N-VivoTM nodes and candidate themes were entered into NVivoTM. Data was coded by heading to refine themes and subthemes, central organising concepts were developed to define each theme, coding stripes were used to identify code repetition and relationships identified within the findings were refined, prior to writing up the ethnographic account. Based upon research findings, influential environmental factors affecting IPL were identified, an IPL Environment Guide was developed, four stages of IPL were recognised, a theoretical perspective of IPL culture was presented, and a decision-making model was proposed. Analysed findings were presented at a national critical care nursing conference and an interprofessional research symposium.

The following examples of analysed data are provided to illustrate the stages of analysis undertaken in the research:

- 10.1 Researcher analysed interview transcript by hand.
- 10.2 Supervisor analysed interview transcript by hand.
- 10.3 Conceptual mapping of themes.
- 10.4 Central Organising Concepts.
- 10.5 Research poster of early findings with candidate themes.
- 10.6 NVivoTM data analysis.
- 10.7 Power point presentation of analysed findings.
- 10.8 An Example of the Data Analysis Process.

Appendix 10.1: Researcher Analysed Interview Transcript by Hand

010104

need to understand
critical thinking

for adult learners particularly as well there's a need to understand
Erm...then

ME: it made me wonder (talked over the top of INT) whether it was possible to learn by instruction I think that was what I did wonder, if people did actually learn by instruction. I don't know what your thoughts are about that?

Quantity of info.

INT: I don't know. I think it depends on the person and the nurse, and the time of day and sometimes I find that you try and explain a rationale a little ?bit the way? I'm explaining it or not. Sometimes the rationale might be too much information

The bottom line
vs.
too much detail

ME: yeah

INT: and what people want is the bottom line. Sometimes if they're busy and they just (8m46s) and they maybe don't see that it is necessarily their..

ME: Um hm

information and
personal interest

INT: Pause....their requirement for them to know in that much detail. I don't know (9m) Whether there is an area that is not particularly of interest to them so sometimes you can over do it

ME: light laughter

INT: and they go well that's fine but what do I do.

ME: light laughter

INT: and other times.. I mean the classic I suppose are ventilator settings isn't it? (9m15s) You can tweak the ventilator and you know and have your rationale for why you have chosen that

ME: yeah

Finding opportunities
to give rationale
(on the ward round)

INT: level of assist or whatever. And try and explain that in a few words on the end of the ward round before you move on to explain what you've done (9m33s)

ME: Ah ha

assumption about
nurses learning needs

INT: But what you don't want, what the nurse doesn't necessarily want is a tutorial about titrating the PEEP to the ARDS do they?

ME: Light laughter – yeah.

INT: and flow volume curves and all of the rest of it.

ME: light laughter

Giving information based
on perceived interest
and body language

INT: So I think you kind of get that as a professional don't you?

What the person is interested in and what, if they're making the right sort of body language in response I suppose.

ME: Yeah, yeah.

INT: So erm...(10m) So I think it's important for, for what, for engaging the staff in the decision making?

ME: yeah does it help others to learn in the team?

INT: so in terms of getting the job done yeah, I would imagine it would do. If they could understand it, I don't think it's essential it depends on lots of factors though doesn't it really?

ME: yeah, yeah.

Assumption that
the lower the
experience of the
health professional
the less detail
is given

INT: and I think for a more junior member of staff who has got loads of things to worry about that day then probably what they want to know is what the minimum (10m34s)? Is for the ventilator and not to go below whatever. For the more senior nurse who's been

Appendix 10.2: Supervisor Analysed Interview Transcript by Hand

010104

imagine particularly for adult learners there's a need to understand
Erm...then

ME: it made me wonder (talked over the top of INT) whether it was possible to learn by instruction I think that was what I did wonder, if people did actually learn by instruction. I don't know what your thoughts are about that?

INT: I don't know. I think it depends on the person and the nurse, and the time of day and sometimes I find that you try and explain a rationale a little bit the way I'm explaining it or not. Sometimes the rationale might be too much information almost

ME: yeah

INT: and what people want is the bottom line. Sometimes if they're busy and they just (8m46s) erm and they maybe feel, maybe they don't see that it is necessarily their..

ME: Um hm

INT: Pause.... their requirement for them to know in that much detail.

I don't know (9m) Whether there is an area that is not particularly of interest to them so sometimes you can over do it

ME: (light laughter)

INT: and they go well that's fine but what do I do?

ME: light laughter

INT: and other times.. I mean the classic I suppose are ventilator settings isn't it? (9m15s) You can tweak the ventilator and you know and have your rationale for why you have chosen that

ME: yeah

INT: level of PEEP or that level of assist or whatever. And you can try and explain that in a few words on the end of the ward round before you move on to explain what you've done (9m33s)

ME: Ah ha

INT: But what you don't want, what the nurse doesn't necessarily want is a tutorial about titrating the PEEP to the ARDS do they?

ME: (Light laughter) - yeah.

INT: and flow volume curves and all of the rest of it.

ME: (light laughter)

INT: So I think you kind of get that as a professional don't you? Pick up on what the person is interested in and what, if they're making the right sort of body language in response I suppose.

ME: Yeah, yeah.

INT: So erm...(10m) So I think it's important for, for what, for engaging the staff in the decision making?

ME: yeah, does it help others to learn in the team?

INT: so in terms of getting the job done yeah, I would imagine it would do. If they could understand it, I don't think it's essential it depends on lots of factors though doesn't it really?

ME: yeah, yeah.

INT: and I think for a more junior member of staff who has got loads of things to worry about that day then probably what they want to know is what the minimum (10m34s) PEEP you would be happy with for the ventilator and not to go below that or whatever. For the more senior nurse who's been around a bit and wants to know what's

Too much info →
people want the bottom line
Can I do it over do it
Can I do it over do it
Junior staff
As simple as possible
or intuition pick up on
non-verbal

Learning depends on
- person
- time
- Context (Context)
- Whether they are interested or not
Gives example of where only little detail needed

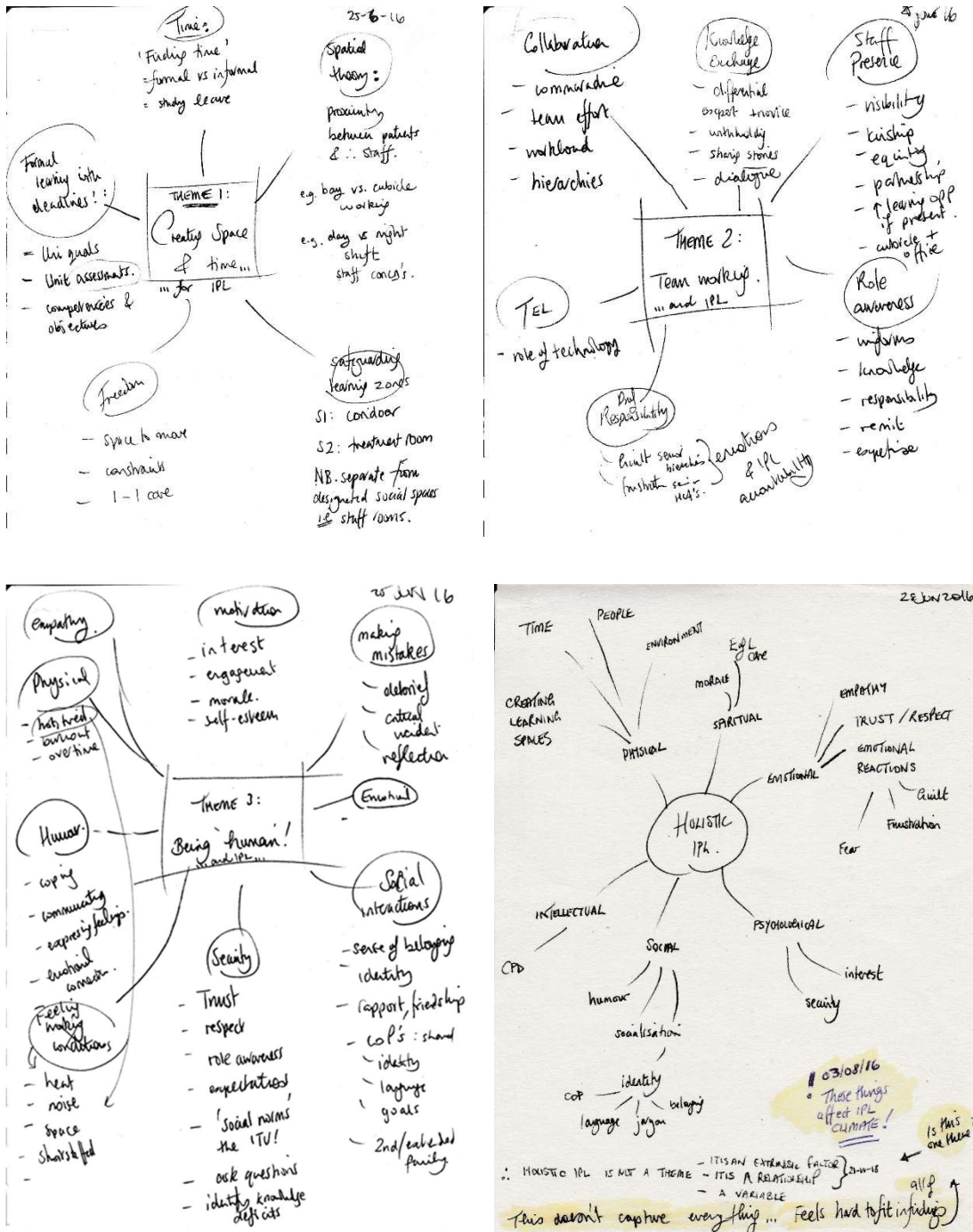
Not essential

Senior nurse who knows more

5

Appendix 10.3: Conceptual Mapping of Themes

Conceptual mapping was used to associate themes and subthemes within the overarching themes and was a useful process to ascertain the relationships between them. The extracts below illustrate the development of the three overarching themes and the development of holistic IPL as a relationship.



Appendix 10.4: Central Organising Concepts

Central Organising Concepts (COCs) were developed from conceptual maps, analysis by hand and NVivo™ analysis. The page below shows the refinement of the COCs:

— Defining each theme —

THEME ONE Embedding IPL

The first theme captures the different ways that IPL is embedded into the learning culture of adult critical care. It considers the opportunities to integrate IPL into the culture, and how PL culture can be enhanced

eg. finding time, leadership, professional roles, space, guilt, drivers: external/internal

THEME TWO Collaborative IPL

This second theme acknowledges the finding that learning between professionals (IPL) is enhanced with collaborative interprofessional working. Theme two considers all of the factors which can influence how people work together to improve IPL.

e.g. dialogue, IPW, boundaries, language, morale, openness, decisionmaking

THEME THREE Humanising IPL

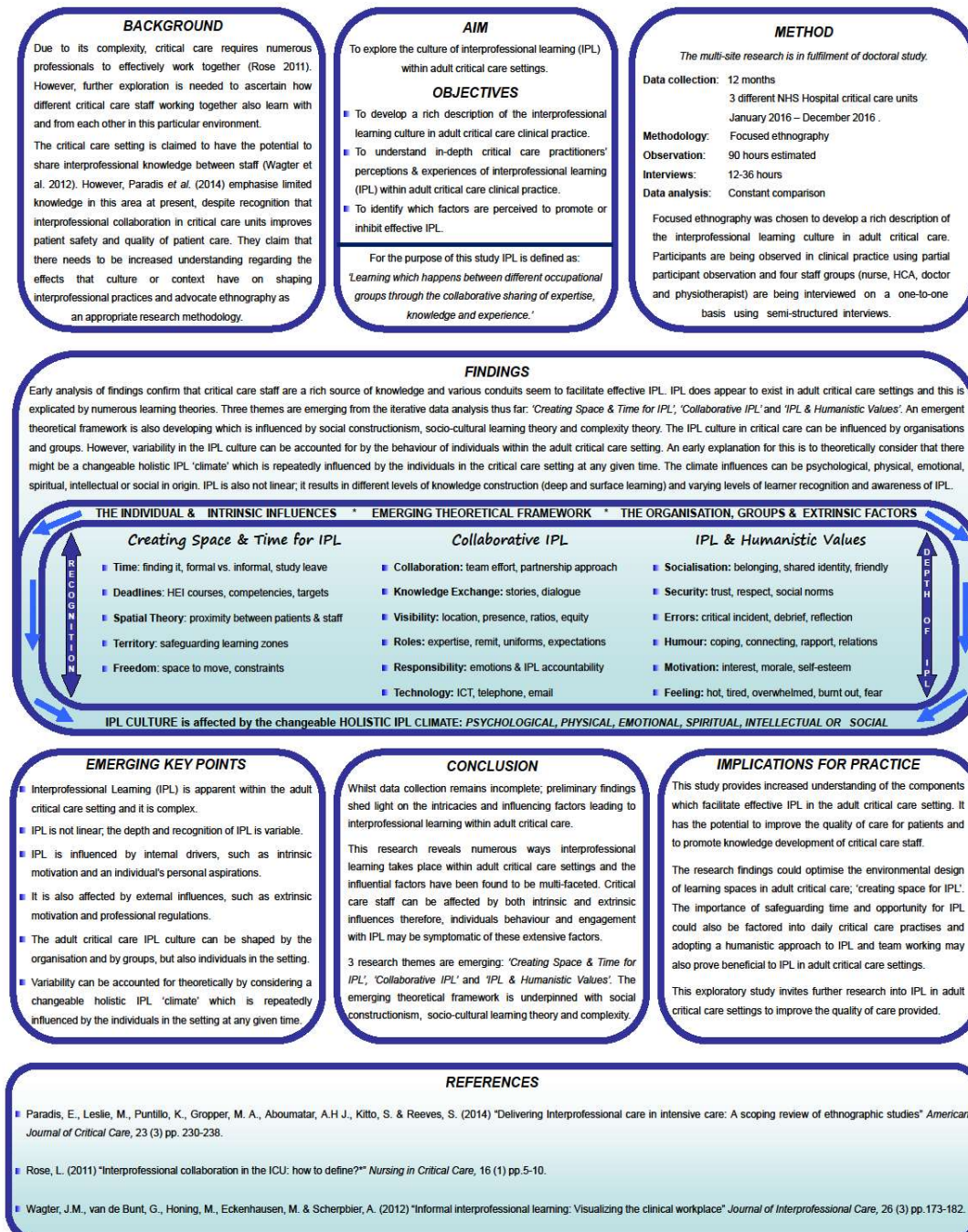
The final theme really emphasises the finding that professionals are people first. Being human bridges IPL in adult critical care and this theme recognises the influence that people within a system have on culture

e.g. being human, agents of change, role modelling, family, shared identity, socialisation, humour

Appendix 10.5: Research Poster of Early Findings with Candidate Themes



Interprofessional Learning in Adult Critical Care: Early findings of a focused ethnographic study



Vikki Park, Senior Lecturer, Northumbria University, Faculty of Health and Life Sciences: vikki2.park@northumbria.ac.uk
Supervisors: Professor Amanda Clarke (Principal), Dr Alison Machin & Lesley Durham

Appendix 10.6: NVivo™ Data Analysis



Memos were used to capture the stages of analysis, represented by this symbol:

The first stage of analysis was captured by the following memo:

Name: Memos\\1 Coding Interviews in NVivo_ autocoding with headings

Description: Semi-structured interviews follow consistent areas of discussion. If these are formatted within the interview transcripts - they can be clustered together for auto code analysis - seems like a good time saver???? 31 JULY 2018

Created On: 31/07/2018 11:19:14

Created By: VP

Modified On: 28/11/2018 13:36:47

Modified By: VP

Size: 2 KB

Coding interviews using NVivo.

I decided to use NVivo to code interviews, using the autocode function with headings, for interview questions/topics because it looked like a time saver and an effectively organised approach to start gathering the themes being discussed in all of the 22 interviews.

Autocode Function using Heading 1 = interview topics discussed

Interview Topics: Heading 1's

Small talk

Profession role in Critical Care

Interprofessional Learning Definition

Community of Practice

- Trust and Respect – sense of belonging – one team

Environment

- holistic Climate (finding) – light – noise – space

Shared goal

- Problem Solving and decision-making – patient centred care

IP Working

- Proximity of staff - Visibility of staff – opportunities for IPW

Learning in the Critical Care Environment

- Errors - Knowledge Exchange - Learning by doing - Motivation

Technology

Emotions

Humour

Interview Close

Added 28/11/2018

DIDN'T DO THIS: Autocode Function using Heading 2 - person speaking?

Not sure this is as important for the data analysis?

Appendix 10.6 (continued) NVivo™ Data Analysis

Coding by heading:

The screenshot shows the NVivo interface with a coding session for the heading 'Personality'. At the top, there is a tab labeled 'Personality' with a close button (X). Below the tab, the first reference is displayed: 'Reference 1 - 0.48% Coverage'. The text of this reference is: 'P: So I do think it is a personality type and how people like to learn; you know, my way of learning might be completely different to yours, for example, and you might have done something completely different. Or one of my colleague might have.' Below this, a second reference is shown: '<Files\\020503 transcript> - § 2 references coded [4.66% Coverage]'. This reference is further broken down into 'Reference 1 - 2.86% Coverage'. The text for this reference is a transcript of a conversation: 'Me: so it sounds like you're learning about their personalities and their characteristics? Irt: that's it, yeah, off the .my staff but also all of the ITU staff, because the other thing is when they do come up I do allocate although they don't realise that I do allocate my physio to the patient depending on which nurse is there. Me: (sharp intake of breath— I'm surprised by this— usually staff are matched to patients not staff) Really? (25m 37s) Irt: All of them: yes. Me: oh wow Irt: definitely so that they get relationships as well with the staff. Me: okay Irt: if they work weekends with the staff they need to walk onto ITU and not always go to him or always go to her. They need to, the staff need to get comfortable with nurses but the nurses need to get confident in my staff as well that they are competent so its very much, some say 'but I already know the patients' and 'I know but, you know it would be really good if (name) saw them, could you just see that one?' So they don't know that I'm actually switching them because I want them to work with a different nurse. Me: that is really interesting Irt: they do go for the nurse, they don't go for the patient fairly often as well. So they go on the unit and see that nurse and then say 'I'll go and see so and so' Me: So what do you think it is? What's the draw do you think why...? Irt: safety, security and Me: is it? Irt: and support for the ITU staff.'

The second memo below captures the stage when codes were placed into the corresponding overarching themes that had been constructed from the candidate themes.

Appendix 10 (continued) NVivo™ Data Analysis

Name: 2 Coding Observations in NVivo

Created On: 24/10/2018 21:01:42

Created By: VP

Modified On: 28/11/2018 13:36:57

Modified By: VP

Size: 2 KB

All 18 observations have already been coded by hand.

In NVivo, 5 nodes were created to organise the observation field notes.

'Access' and 'Researcher role' capture the reflexive comments and the nature of actually being a researcher and doing the research.

'Environment' considers the ways that the environment was observed.

'Interactions' describe and capture instances when staff are working together or alone.

'Learning' recognises moments when learning has or is likely to have occurred.

Once all 18 field notes had been given the nodes above (i.e. coded using NVivo) they were then added to the relevant overarching theme.

4 (candidate) themes have been selected at this stage:

1. Embedding IPL - (recognising opportunities to learn and the need to embed them into IPL culture)
2. Collaborative IPL - (seeking instances when different professions work together or separately)
3. Humanistic IPL - (being human within the complex system of critical care affects IPL - human traits and behaviours)
4. Holistic IPL - (the people in the environment affect the climate of IPL - physical, social, psychological, emotional...etc.)

The latter theme was not an overarching theme and transpired as a relationship between codes, and was therefore discarded as analysis proceeded. This memo entry captures the final stages of coding completion:

Name: 3 Final stages of coding in NVivo 28 NOV 2018

Created On: 28/11/2018 13:34:51

Created By: VP

Modified On: 28/11/2018 13:40:49

Modified By: VP

Size: 59 KB

Appendix 10 (continued) NVivo™ Data Analysis

I have read through every node, checked for duplication & made sure that each extract is in the right place i.e. that it is has been highlighted & coded to the right heading. Once checked the node was given a green colour to show completion. Amber was used to show where I was up to. This has taken a long time and when all checked through and signed off as green, all of the nodes were then aggregated at the child (& grandchild) nodes. This meant that each theme had all of the coded extracts within it linked to the theme name. Coding stripes also checked for duplication.

All of the data in each theme could then be selected, cut & exported into word to start typing findings into the thesis chapters to construct the ethnographic account.

THEME 1_Embedding IPL_opportunities	40	699	22/10/2018 14:56	VP	28/11/2018 13:26	VP	
THEME 2_Collaborative IPL_COP and teamwork	37	360	22/10/2018 14:59	VP	28/11/2018 13:27	VP	
THEME 3_Humanising IPL_being human	38	228	22/10/2018 15:02	VP	28/11/2018 13:27	VP	

Coding stripes were a function used in NVivo™ to identify repetition of codes. This was extremely useful to ensure codes were distinct and to make sure codes were also placed within the correct overarching theme groups. The memo below illustrates how increased coding was required where multiple codes crossed overarching themes:

Name: coding density x3_themes 3, 2, 2

Created On: 04/12/2018 08:20:55

Created By: VP

Modified On: 04/12/2018 09:05:44

Modified By: VP

Size: 296 KB

nothing going on with that patent" but when a relative comes in, they think: oh my God. All they see is all these wires attached to them. So I think I try to make the area bit more 'normal', rather than say, human.

I: Yes.

Reference 7 - 1.78% Coverage

Environment

P: It's not as frightening as if it's just your normal working environment, or your normal... Yeah, your normal environment. It makes it easier and you feel more relaxed and more receptive to learn or ask questions and... And often, I think a lot of the learning that goes on, you're oblivious it's actually happening. I think you know, like things like clinical supervision, we keep [saying] we do it, but we just don't write it down. You know? And, because it's just chit-chat and I think people learn an awful lot just by chatting away there at the bed space. Without realising. And to be honest, people are obsessed about revalidation at the minute and I keep saying... You know, [name], our educator said "we'll be fine. Our unit is fine. We all have the right [indiscipherable 9:50] to ours" and I keep saying "you know, we've just had a chat there now. That could be 'reflection'".

I: Absolutely. Yes. Oh, thanks for that; that's what I'll do for mine.

<Files\010603 transcription> - 5 references coded [15.41% Coverage]

Section 1 of 3

Coding density x3:

Socialising - theme 3

Questions - theme 2

Appendix 10 (continued) NVivo™ Data Analysis

Atmosphere - theme 2

Gone a bit wrong - need to review when more awake!

Can be broken down into smaller parts

lines 1-3 atmosphere (theme 2)

lines 3-7 chatting informal (theme 1)

lines 8-10 revalidation (theme 1)

line 10 reflection (theme 3)

Relationships between codes were also indicated by the data, such as holistic IPL. The memo below shows how a word search tool in NVivo™ suggested critical care staff focused on PCC as much as IPL, reinforcing the finding that PCC was motive for IPL.

Name: relationship between patient centred care and learning in CCD

Created On: 31/07/2018 18:31:48

Created By: VP

Modified On: 31/07/2018 18:32:39

Modified By: VP

Size: 2 KB

This word search reveals the relationship between patient centred care and learning in CCD are of equal value during discussions - it is all about the shared goal of learning for the patients benefit.

Appendix 10.6 (continued) NVivo™ Data Analysis

The screen shot below illustrates the three overarching themes, *Embedding IPL*, *Collaborative IPL* and *Humanising IPL* as they were organised in NVivo™ at the point of coding completion. The node for the third overarching theme, *Humanising IPL*, is expanded to reveal the child nodes (themes).

Nodes				
	Name		Files	References
	IPL definition_small talk_interview close		22	53
	Reflexivity		23	206
	THEME 1_Embedding IPL_opportunities		40	712
	THEME 2_Collaborative IPL_Community, connections COP and teamwork		38	420
	THEME 3_Humanising IPL_being human		36	154
	Being human		4	6
	Emotion		18	25
	Errors		2	2
	Humour		35	61
	Intuition		1	1
	Motivation		14	31
	Patient Centred		12	15
	Personality		4	5

Appendix 10.7: Power Point Presentation of Analysed Findings

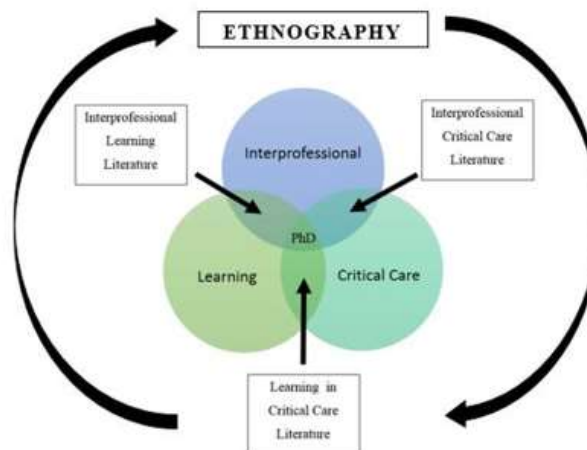
A Focused Ethnography of Interprofessional Learning Culture in Critical Care

Vikki Park
Senior Lecturer in Adult Nursing

CAIPE Research Symposium
November 2019

#TakeOnTomorrow

The PhD focus



The Research

AIMS

- Develop a rich description of the interprofessional learning culture in adult critical care.
- Gain in-depth understanding of critical care staff perceptions and experiences of interprofessional learning within adult critical care.
- Identify the perceived factors promoting or inhibiting interprofessional learning in adult critical care.

OVERARCHING QUESTION

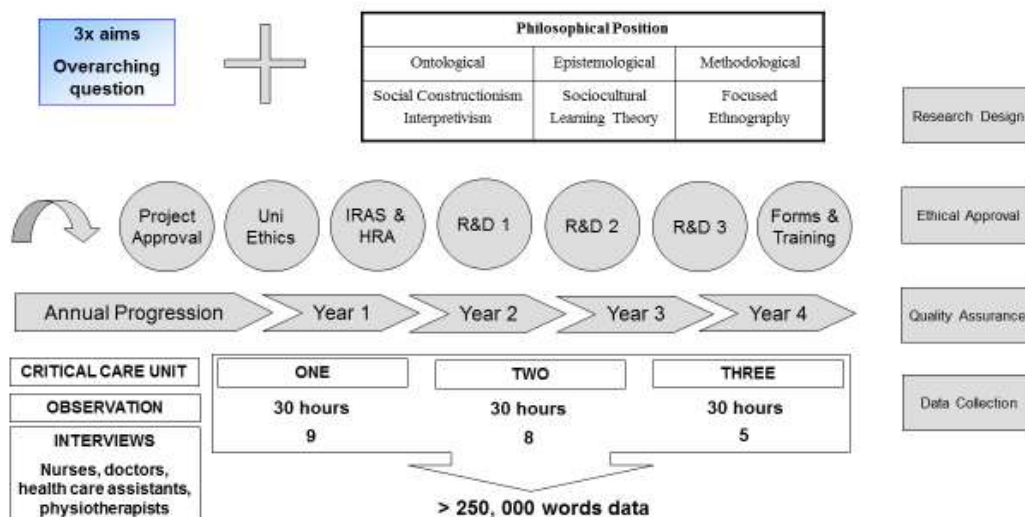
What influences interprofessional learning (IPL) culture in the adult critical care environment?

Appendix 10.7 (continued) Power Point Presentation of Analysed Findings

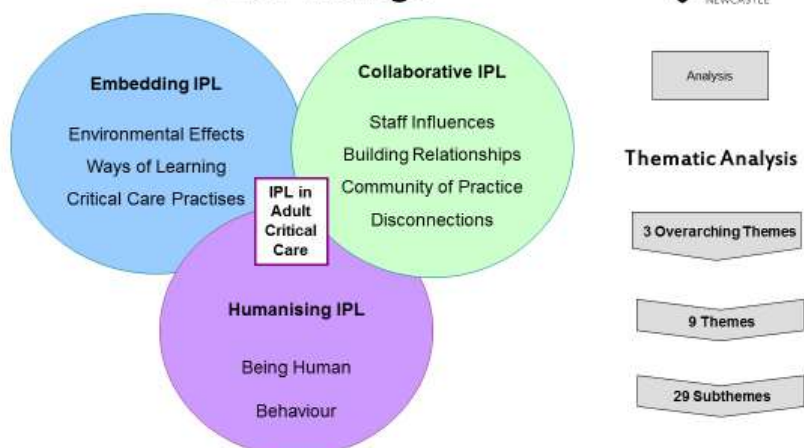
The Process: An overview



The Process: In stages



The Findings



Key Findings: The IPL Climate

Interprofessional learning in critical care is affected by the IPL climate.

FEATURES

- The IPL climate:
 - fluctuates and IPL levels are changeable
 - can be immediately affected by influential factors
 - is affected by holistic factors

INFLUENTIAL FACTORS

- People affect levels of IPL through:
 - behaviour
 - 'being human'
- Environmental factors affect IPL climate, such as:
 - temperature extremes, staff shortages
- Hierarchy & leadership influence IPL climate:
 - senior staff affect the climate more than junior

IPL culture is more entrenched, takes longer to change and is heavily influenced by organisational culture.

Key Findings: Knowledge Exchange

Filling the knowledge gap:
*The emptier the bucket,
the less it is filled!*



An unexpected finding:

The greater the knowledge gap, the less is shared.

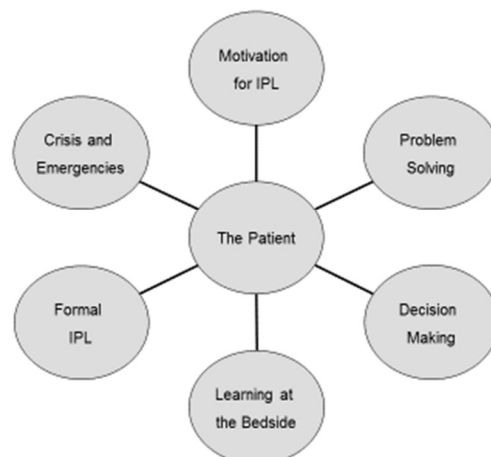
In terms of levels of expertise, the greater the knowledge differential between staff, the less knowledge was shared.

Knowledgeable staff made assumptions about other professions levels of knowledge and their motivation to learn.

This affected the depth of IPL and knowledge was often retained and summarised, resulting in brief interprofessional learning exchanges.

However, rich knowledge was exchanged between experts.

Key Findings: Patient Centred Care



A consistent finding:

*The critically ill patient
is at the centre of IPL.*

Staff learned from each other to:

- care for patients,
- save lives,
- plan care,
- make effective decisions,
- minimise disruption for patients,
- promote patient wellbeing

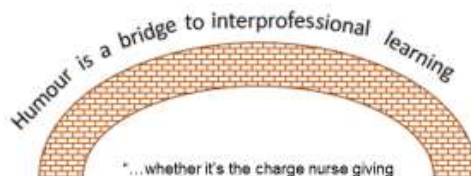
Appendix 10.7 (continued) Power Point Presentation of Analysed Findings

Key Findings: *Humour*



Humour:

- Could be learned through IPL
- Created connections
- Developed rapport
- Improved staff morale
- Promoted job satisfaction
- Helped staff to cope
- Forged secure relationships and trust
- Was an icebreaker
- Broke down hierarchical barriers
- Created opportunities to interact
- Improved engagement with IPL
- Needed to be used professionally



"...whether it's the charge nurse giving one of my colleagues a fake patient name on April Fools Day, that if read out loud was slightly dodgy... or it's just day-to-day light heartedness about certain things... it's probably a sign of fairly healthy morale I think"

Interview 1



Key Findings: *Environment*



Physical environment	Working conditions
Favourable environmental conditions:	Favourable working conditions:
Temperature regulation – air conditioning, drinking water, fresh air	Trust and rapport
Sufficient space	Safe to ask questions
Controllable light – dimmers and shutters	Range of skilled staff and extended roles
Minimal sound levels	Organisational support for IPL
Good lines of sight of colleagues	Learning about each other
Working in close proximity to staff	Professional networking opportunities
	Interprofessional activities

Key Findings: *the good IPL environment*



A critical care with a rich IPL culture would be likely to include the following:

An open atmosphere which is safe to ask questions.

Good visibility of staff.

Close proximity to interprofessional colleagues.

A range of staff with extended roles.

Staff who know each other well e.g. through professional networking or socialising.

Acceptance of the human characteristics of the people working in critical care e.g. humour and emotions within the boundaries of professional conduct.

Strong role models and advocates of IPL.

Organisational support - IPL culture permeates down from organisational leaders.

Recognising opportunities for IPL, designing the unit and planning daily activities to promote IPL.

Favourable environmental conditions e.g. temperature, space, light and sound levels.

Designate spaces to learn.

Recommendations: in a nutshell



- Raise awareness of the IPL potential of the environment
- Discussing IPL openly may remove assumptions that limit learning between professions
- Create opportunities for interprofessional learning
- Increase collaboration between professions to strengthen the community of practice
- Establish influential factors in the critical care environment based on research findings
- Optimise the environment: physical attributes and working conditions
- Consider the position of staff in the unit to promote IPL (proximity and visibility)
- Review locations used for learning, and designate and safeguard spaces to learn inside the critical care unit
- Strong role models could be positioned as IPL champions
- Organisational leaders need to support interprofessional learning in critical care

Summary



- Critical care is a knowledge dense environment
- There are many missed opportunities for IPL in daily practice
- An open dialogue and increased recognition of IPL opportunities could promote IPL
- Awareness of the influential factors in critical care could enhance the IPL climate
- Making time and space for IPL may increase the expertise of the critical care unit
- Critical care environments can be adapted to optimise IPL
- For IPL to be collaborative, staff need to connect, to support their community of practice
- Critical care may benefit from humanising IPL, embracing the facets of being human

Thank you for listening



- Further information can be found via:

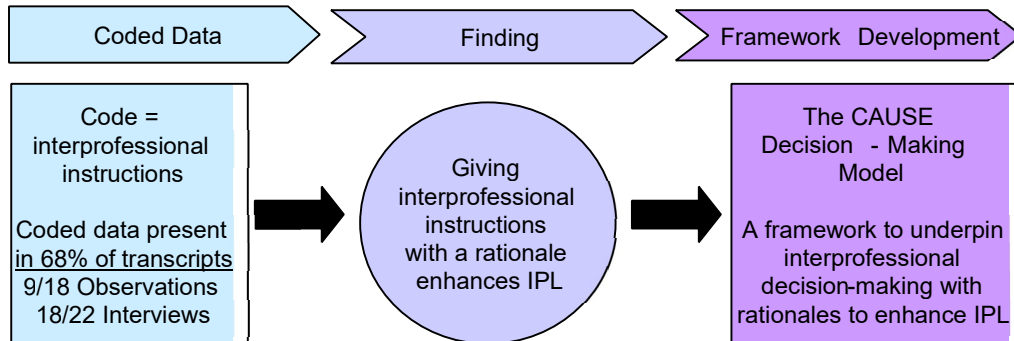
University staff profile: <https://www.northumbria.ac.uk/about-us/our-staff/p/vikki-park/>

Academia: <https://northumbria.academia.edu/VikkiPark>

Research Gate: https://www.researchgate.net/profile/Vikki_Park

Appendix 10.8: An Example of the Data Analysis Process

An example is given using one initial coded piece of data, taken through the data collection & analysis process, leading to construction of the research finding that informed the development of a decision-making framework.



KEY	S = Site	V = Visit	i = Interview	Q = Questions raised
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Data collection event	Coding by hand	Coding in N-Vivo	Data extract	Reflections
S1:V1	Behind curtains instructions	Instructions	It was a hive of activity. A lot of activity was happening away from the patient and in the centre of the ward, or directly in contact with patients. Interprofessional instructions could be heard from behind curtains as instructions were given to mobilise patients.	Q. Can you learn from instructions?
S1:V2	Instructions, no rationale	Instructions Rationale	Nurse sought advice about a blocked vas catheter. The senior nurse in charge gave instructions – do not flush, bung it off, and label them as blocked. A rationale was not given. Q. Did the nurse asking the question get instructions only or did she also learn the reason to underpin her practice?	Q. How deep is learning without a rationale?
	Nurse asks question. Doctor answers instructions only.	Instructions	Consultant in charge (CIC) in another bed space. The nurse asks, “is there anything you want me to do?” CIC replies by giving a list of instructions. Q. Can we learn from instructions?	Q. Is this using a behaviourist approach?
S1:V3	Rationale for decision-making	Rationale Decision-making	Interprofessional rationale observed for a care plan decision. Rationale for decision-making e.g. CPAP and trachy mask regimes, time of day, Atrial Fibrillation complications and patient fatigue.	Rationales enable learning about the reasons for decisions and staff learn about others’ decision-making.

Appendix 10.8 (continued) An Example of the Data Analysis Process

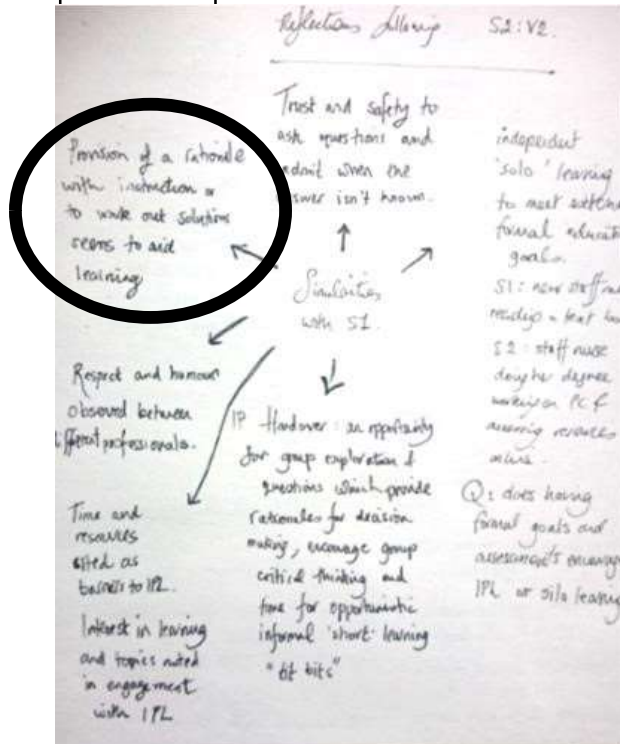
Data collection event	Coding by hand	Coding in N-Vivo	Data extract	Reflections
S1:V4	Dr instructions for nurses	Instructions Rationale Safety	Interprofessional instruction with rationale given for patient safety. Consultant from day shift approaches nurses and emphasises the importance of one person being 'solely responsible for maintaining the patient airway during any positional changes'. Instructions given, with the request to share them and pass them forward to everyone in the team.	Learning to practice safely
S1:i1	Finding opportunities to give rationale (on the ward round) Giving rationales to get the job done. Rationale/ reason for decision-making Unintended learning Rationales for high quality care Motivational not educational Instruction vs. rationales	Instructions Rationale Motivation	"You can tweak the ventilator... and have your rationale for why you have chosen that... level of assist or whatever and try and explain that in a few words on the end of the ward round before you move on to explain what you've done." The provision of rationales explored: <ul style="list-style-type: none"> Increased execution of tasks "getting the job done" More agreement with decisions Unintended learning may occur Presumed increased IPL Increased quality of patient care Critical thinking is enabled, there is a need to understand as adult learners Motivational purposes not educational intentions Sometimes the rationale may be too much information almost Assumptions are made about others learning needs and desires to learn <p>LINKS TO KNOWLEDGE DIFFERENTIALS & MOTIVATION</p>	Observations from the first four site visits were considered during this interview. Rationale sharing may have many benefits, including shared reasoning for decision-making, increased execution of tasks and this may lead to learning. Rationales are not essential for instructions, and they may give more information than the person desires. Learning is contextual.
S1: i2	Rationale	Instructions Rationale Holistic care Professional roles	Suggestions need to be weighted on clinical justification. Patient care plans need interprofessional discussion and justified thinking with clinical reasoning. Professionals have different views, so sharing justification and rationales for clinical reasoning enables professions to co-create patient care plans.	Rationales provide the clinical justification and reasoning behind decisions.
S1:i3	Explaining actions Rationale	Rationale Learning by doing	Registrar explained their role as educating nurses and explaining their actions. Cannot learn from instruction – learn by doing and through practice experience.	Rationale is integral to the doctors' role to facilitate IPL. Learning by doing, not by instruction.

Appendix 10.8 (continued) An Example of the Data Analysis Process

Data collection event	Coding by hand	Coding in N-Vivo	Data	Reflections
S1:i4	Rationales increase IPL Tasks need rationales Reflection with debrief can promote IPL	Instructions Rationale Debrief Reflection	Explaining the rationale behind decisions meets the learning needs of the team. I take every opportunity to explain the rationale behind why I've made a decision about something. If giving tasks to people, it's important to explain why... because they have learning needs and there's multiple learning opportunities... on a daily basis. Giving instructions without a rationale you're wasting a big opportunity for IPL. Rationales provide a degree of knowledge of the physiology behind actions and decisions. Instructions are needed in emergency situations and debrief can be used after events to provide rationales for learning from events.	Rationale meets learning needs. Not giving a rationale is a missed IPL opportunity. Instruction only is needed in emergencies, but debrief can highlight rationales later.
S1:i5	Rationales follow instructions	Instructions Rationale Learning from others	Instructions are needed initially, and the reason is given naturally; it's common sense that it follows instructions. There is an evidence-based culture now with nurses; they want a rationale for decisions. People who seek out a rationale learn from others, but being asked questions can be challenging, frustrating and can identify knowledge gaps, and can increase the knowledge of senior staff.	Rationales naturally follow instructions. The evidence-based nursing culture warrants rationales. You can learn from rationales but providing them can be challenging, frustrating and identifies knowledge gaps.
S1: i7	Rationales important. Time and knowledge are barriers to rationales	Instructions Rationale Time	Barriers to rationales are that it is time consuming, lack of thought about rationales for practice, there isn't always a rationale to share, rationales used informal education, professionals should have rationales for practice.	Rationales are important but are not always given due to barriers.
S1:i8	Patients too ill for rationales Interest affects rationale and learning	Rationale Safety Motivation	Patients can be too ill for rationale provision – the focus is on the patient safety and condition, so instructions may be prioritised. Individual interest affects seeking rationales and learning.	Rationales are affected by interest and patient illness.

Appendix 10.8 (continued) An Example of the Data Analysis Process

Data collection event	Coding by hand	Coding in N - Vivo	Data	Reflections
S1:i8	Knowledge increases with a rationale	Career Professional Role	Rationales give extra knowledge for career development. In the HCA role, rationale is not needed for instructions but it leads to increased knowledge. Doctors rarely give rationales to HCAs voluntarily. Evidence base is rarely shared, HCAs are just given instructions e.g. with aseptic technique, "told not to touch, it's sterile."	Rationales enhance knowledge, and facilitate career development. Rationales are rarely given to HCAs by other professions.
S1:i9	Task instructions	Instructions Learning from others	Learning by instruction: example given of being told how to do a 12 lead ECG.	You can learn to follow steps in a process with instruction.
S2:V2	Medication change explained.	Rationale Instructions	Rationale was given for medication changes during a ward round. Rationales for decision - making: instruction with a rationale aids IPL.	Provision of a rationale with instructions or to work out solutions seems to aid learning. Conceptual map used to make S1 comparisons to S2.



Appendix 10.8 (continued) An Example of the Data Analysis Process

Data collection event	Coding by hand	Coding in N-Vivo	Data	Reflections
S2:V4	Nurse instructs a doctor Task Instructions	Instructions Rapport	A nurse instructs a doctor to take a blood gas.	Interesting reversal of traditional hierarchy. Is this because of rapport and being part of a team and a community of practice?
S2:i1	Learning from others thoughts behind decisions. Bedside teaching.	Rationale Decision-making Learning from others Ward rounds Learning by doing	Giving rationale for decision-making showcases the professionals thought processes. You can learn from knowing people's decision-making processes and you can get more information. Varied practice occurs with the spontaneous provision of a rationale. The ward round is an opportunity for in-depth bedside teaching exploring rationales behind decisions and actions. People on the periphery may also learn by listening to the discussions. Learning from instructions can be for task orientated activities, like protocols and algorithms, but people need experience to learn by doing.	When people share their thoughts that led to decisions, it is possible to learn from others. The ward round promotes bedside teaching, but rationales can also be shared spontaneously. People can learn tasks from instructions but learning is consolidated when learnt by doing.
S2:i2	HCAs instructed to set up equipment	Instructions	HCAs are asked to set up trolleys and check equipment with staff, after being previously shown which equipment is needed for specific occasions.	Rationale provision seems limited with HCAs and instructions seem common.
S2:i3	Rationales Barrier – defensive reactions, high staff turnover Different culture	Rationales Education	Rationales: staff become defensive when asked for rationales. In another hospital ITU, asking for a rationale would result in sharing knowledge “they would tell you anything”. Different critical care cultures are insinuated by this experience & having different team members can lead to inconsistency in care & lack of articulation of a rationale. LINK TO IPL CLIMATE Shared education means staff know why things are “being done”. Learning gives meaning to action, rather than going through the process and going through the motions. You need knowledge to underpin practice and rationale is needed to underpin practice.	The large staff numbers & high turnover of the team affects care by reduced sharing of rationales. This may be due to reduced levels of rapport and trust in temporary teams. Structured education & standardised practice provides rationales.

Appendix 10.8 (continued) An Example of the Data Analysis Process

Data collection event	Coding by hand	Coding in N-Vivo	Data	Reflections
S2:i4	<p>Instructions insufficient, need experience to learn.</p> <p>Differing approaches</p> <p>Being human makes learning complex.</p> <p>Rationales promote IPL</p>	<p>Learning by experience</p> <p>Instructions</p> <p>Being human</p> <p>Empower</p> <p>Critical thinking.</p>	<p>Cannot learn from instruction alone because “experience always counts”. Often, a different approach is needed for different patients, different situations and because we are humans, there are many factors to take into consideration.</p> <p>LINK TO BEING HUMAN.</p> <p>Giving a rationale or a patient goal behind decisions can shape understanding, promoting learning and staff empowerment to make decisions.</p> <p>Instructions need critical thinking for learning to occur.</p>	<p>Instructions are insufficient to learn from because learning is experiential and contextual.</p> <p>Being human affects IPL.</p> <p>Rationales shape understanding, promote IPL and empower staff with decision-making.</p> <p>To learn from an instruction, critical thinking must occur.</p>
S2:i5	<p>Rationales explain professions roles</p> <p>Learning by listening to rationales</p>	<p>Professional roles</p> <p>LPP</p> <p>Learning from others</p>	<p>It is important to explain why you are doing something in your professional role, so that others can act appropriately in your absence (blurred professional roles e.g. chest physio).</p> <p>Teaching others can provide rationales to those listening.</p> <p>LINK TO LEGITIMATE PERIPHERAL PARTICIPATION (LPP).</p> <p>Rationales & explanations behind decisions & actions strengthen & reinforce everybody's learning, & colleagues “upskill” via listening.</p>	<p>Giving a rationale for instructions means that care can continue to be given to patients by other interprofessional team members.</p> <p>Staff can learn by listening to other conversations: this reinforces learning through understanding reasons behind decisions & actions.</p>
S2:i6	<p>Physios want to know doctors rationales</p> <p>Drs exclude physios from decisions</p> <p>No rationale in notes</p> <p>Missed IPL opportunity</p>	<p>Rationale</p> <p>Documentation</p> <p>Decision making</p> <p>Learning from others</p> <p>Patient centred care</p>	<p>Physios would appreciate the rationale behind consultant instructional decisions in care plans. Physios are excluded from medical decision-making.</p> <p>Rationale is not present in medical notes. Knowing rationales behind instructions could increase understanding & there are missed opportunities for IPL when rationales are not shared. Consultant rationale would provide shared goals for patient care, could help the physio to learn & would increase their confidence.</p>	<p>When staff members are excluded from interprofessional decision-making & rationales for decisions are not heard, discussed, or documented, there is no IPL.</p> <p>Confidence levels are linked with levels of learning.</p>

Appendix 10.8 (continued) An Example of the Data Analysis Process

Data collection event	Coding by hand	Coding in N-Vivo	Data	Reflections
S2:i8	<p>Rationale sharing increases with team planning.</p> <p>Rationales improve quality of care.</p> <p>Natural to seek rationales.</p> <p>Instructions are easier with rationales</p> <p>Patients are safer with rationales.</p> <p>Rationales give staff knowledge.</p>	<p>Rationale</p> <p>Learning from others</p> <p>Patient safety</p> <p>Patient Centred Care</p> <p>Decision making</p>	<p>Interprofessional team care planning shows the rationale behind decisions & open collaborative interprofessional planning enables other professionals to share their unique knowledge to provide enhanced care to patients.</p> <p>Reasons for decisions are given to tell staff why things are happening. It's natural to want to know why things are done. It is easier for others to follow instructions with a shared rationale ("more compliance") if they understand & agree. Rationales allow / enable informed decision-making for patients as their condition changes. Rationales increase patient safety & patient centred care. Rationales enable learning, increase competence, and inform future care decisions. Rationales empower team members. Providing rationales benefits patients. The more knowledge staff have, the quicker patient treatment happens.</p> <p>Increasing knowledge in the team reduces the decision-making cascade.</p>	<p>When interprofessional staff plan patient care, rationales are shared.</p> <p>Sharing rationales increases staff understanding, compliance, knowledge and empowers and informs decision-making.</p> <p>Patient care is more collaborative, is based on knowledge, is safer and decisions are made faster with rationales.</p>
S3:V5	<p>Doctor gives the rationale for amending NG feeding regimes</p>	<p>Rationale</p> <p>Patient centred care</p>	<p>Ward round: 2 nurses (charge nurse & bedside nurse) and 2 Drs (consultant and junior doctor).</p> <p>An example of giving a rationale: Consultant reduces the frusemide dose & prescribes 500mls of water via NG every 24 hours because the patient has a bad chest & they want to keep it dry.</p> <p>Rationale given to explain the decision made by the consultant to continue with NG feed overnight to ensure the patient receives adequate nutrition.</p>	<p>Q. Does giving rationales to interprofessional colleagues to explain decisions about patient treatment enhance IPL?</p>
S3:i1	<p>Rationales for instructions increase knowledge</p> <p>Patients receive safer care with rationales</p> <p>Learning from written instructions</p>	<p>Rationales</p> <p>Instructions</p> <p>Patient safety</p> <p>Patient centred care</p> <p>Documentation</p>	<p>Understanding why equipment is needed & what it is used for, gives greater knowledge into the rationale for staff requesting equipment. Asking why things are done, getting a rationale provides patient centred care, increases understanding of patient risk, increases safety & this warrants deeper learning & increases knowledge.</p> <p>Learning from instructions: written instructions or guidelines can capture a person's procedural knowledge; you can learn procedures from written instructions</p>	<p>Rationales for requesting equipment promotes learning of their use in patient treatments. Rationales increase risk awareness, patient safety & promotes patient centred care.</p> <p>Written instruction captures knowledge</p>

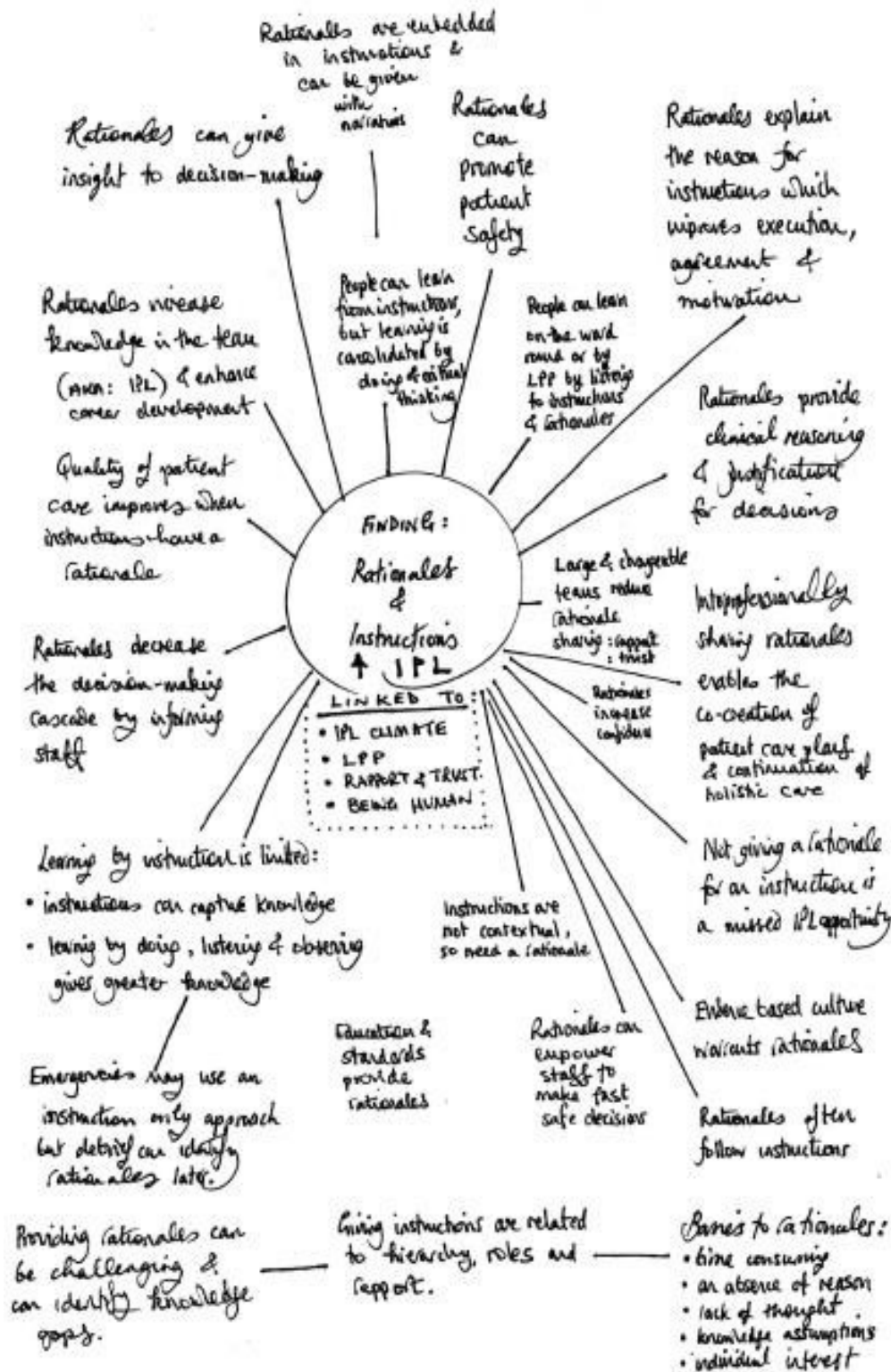
Appendix 10.8 (continued) An Example of the Data Analysis Process

Data collection event	Coding by hand	Coding in N-Vivo	Data	Reflections
S3:V6	Handover questions and facts without rationales Learning by observation	Rationales Learning from others Learning by observing Asking questions	Interprofessional questions are asked at a patient handover for admission, without a rationale being shared. A critical care assistant teaches a nurse (and me) how to use the UVB room cleaner. Rationale given for protecting IV fluids from the UV light during the process because it breaks down the components in the fluid.	Learning is limited when statements or instructions are given without rationales. The intricacies of clinical practice are articulated when rationales are shared.
S3:i3	Rationales underpin instructions People can describe rationales by thinking out loud.	Rationales Instructions Decision-making	If you dig deeper with instructions the rationale becomes apparent. Some people offer rationales by providing a narrative and thinking out loud during decision-making or during care provision	Rationales are embedded within instructions & need to be extracted. Rationales can be given through narratives.
S3:i4	Rationales make work easier and care more appropriate	Rationales Patient centred care	Sharing a rationale or explanation makes it easier for staff to work and to provide the appropriate care to patients.	Rationales increase understanding of tasks and improve patient care.
S3:i5	Professions autonomy Learning rationales by listening Ward rounds Nurse instructions Learning about roles Asking questions	Professional roles Instructions Rationales LPP Learning from others Asking questions	The physio is autonomous to the doctors, so doesn't get instructions from the doctors, unlike nurses. Physios and doctors discuss patient management options. Rationales for practice can be learned by listening (Legitimate Peripheral Participation) or attending ward rounds. The physio instructs nurses on care to continue for patients. Shadowing enables the nurse to find out the rationale behind physio practice. Experienced nurses seek rationales from physios by asking questions.	Instructions are given by different professions, and rationales can be learnt by listening, observing, asking questions and attending ward rounds.

Appendix 10.8 (continued) An Example of the Data Analysis Process

Finding

Conceptual map used to consolidate findings
about rationales & instructions



Appendix 10.8 (continued) An Example of the Data Analysis Process

Framework Development

The CAUSE Decision-Making Model

A framework to underpin interprofessional decision-making with rationales to enhance IPL

The research findings indicate that there are numerous benefits to the provision of a rationale to supplement instructions. The inclusion of a rationale to justify clinical decisions or to explain instructions enables professionals to learn from the theoretical evidence base that has been considered whilst planning the day-to-day care of patients. Ethnographic observations suggested that no formal mechanism existed to integrate rationales within daily decision-making practices. A decision-making model was therefore proposed, which was based upon the research findings, with the aim of clearly articulating the underpinning rationale attained from clinical reasoning. When communicating decisions to the interprofessional team it would be beneficial to articulate the problem encountered, explain why this decision was chosen and articulate why other options were excluded. This approach promotes interprofessional dialogue, interprofessional learning and shared understanding. An acronym was developed to frame the approach to decision-making that promotes rationale provision and optimises IPL.

The CAUSE Decision-Making Model

Condition	What is the condition or cause of concern?
Appraise	What solutions or interventions are possible?
Upshot	What effects may arise from possible interventions?
Safety	What are the safety risks involved?
Exclude	Which interventions are excluded?
CAUSE	State the final decision made and give the reasons why.

Appendix 10.8 (continued) An Example of the Data Analysis Process

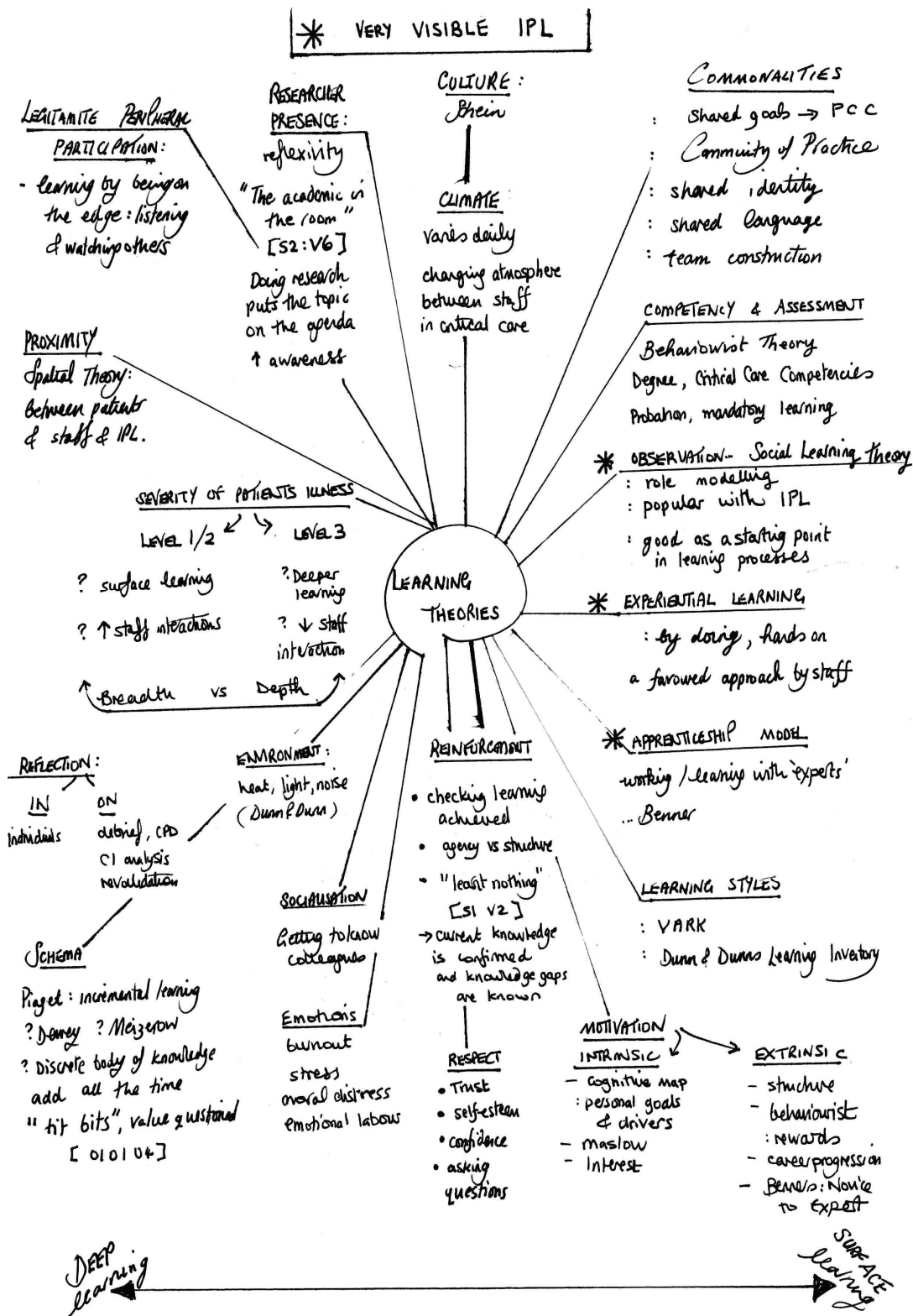
Applying the CAUSE Decision-Making Model

A clinical case observed during a research site visit was used to apply the theoretical decision-making framework to the practice context. A patient presented with reduced urine output and a junior doctor was guided by a consultant to improve the patient's condition. This scenario has been reframed within the CAUSE model as an exemplar for its application to practice:

Condition <i>What is the condition or cause of concern?</i>	The patient's urine output has decreased, they have a positive fluid balance and have peripheral oedema.				
Appraise <i>What solutions or interventions are possible?</i>	Options include:				
	Continual monitoring of the situation	Administering a fluid bolus	Starting a vasoconstrictor	Administering diuretics	Commencing haemofiltration
Upshot <i>What effects may arise from possible intervention?</i>	The patient's body could regulate itself without intervention	Circulating volume can be temporarily increased with a fluid bolus	Vasoconstrictor can be used to increase vascular tone by causing constriction, supporting the cardiovascular system	Giving a diuretic makes the kidneys excrete more urine	Performing haemofiltration surpasses the role of filtration in the kidneys during organ failure
Safety <i>What are the safety risks involved?</i>	The patient could deteriorate with no input	Additional fluid may lead to complications with breathing and circulation	Vasoconstrictor usually require a central line insertion, can have several side effects, and needs continual monitoring of blood pressure with an arterial line	Diuretics may affect electrolyte balance and reduce blood pressure	Kidney filtration also requires insertion of an invasive central line and is a complex, costly, high risk intervention for critically ill patients
Exclude <i>Which interventions are excluded?</i>	Some intervention is required to stabilise the patient.		Pharmacological intervention is to be initially avoided to prevent escalating the patients care and to reduce the risk of side effects (inotropes and diuretics are excluded)	Haemofiltration is the least preferred option, the patient is too stable to require this treatment at present.	
CAUSE	An intravenous fluid bolus is chosen as the first treatment option. This intervention is comparatively low risk, can be implemented quickly and may stabilise the patient sufficiently to avoid more invasive treatments.				

N.B. This theoretical model has not been validated in practice

Appendix 11: Conceptual Map of Educational Theories



Appendix 12: Reflexivity Examples

Reflexive comments were integrated into ethnographic field notes. These were coded as part of the data, relating to accessing the field and the researcher role. There were 206 references made to reflexive comments in the field notes, illustrating that a highly reflexive approach was taken within the research, as the NVivo™ screenshot shows:

Nodes			
Name	Files	References	
IPL definition_small talk_interview close	22	53	
Reflexivity	23	206	
Access	20	126	
Acceptance	14	34	
first impressions	6	11	
friendly	11	16	
gatekeeper	6	8	
Introductions	13	26	
limited access	5	7	
publicity	4	5	
Unfriendly	9	14	
Researcher role	19	80	
drawing data	2	3	
explaining research for consent	8	12	
Introductions for consent	5	11	
Observation data	4	4	
outsider position	13	25	
triple role	8	17	
writing field note data	4	6	
THEME 1_Embedding IPL_opportunities	40	712	
THEME 2_Collaborative IPL_Community, connections COP and teamwork	38	420	
THEME 3_Humanising IPL_being human	36	154	

Access to the field of study was a complex process; a reflexive approach was needed to negotiate the continual consenting process to enter critical care. Negotiation involved collaborating with gatekeepers, publicising the study, numerous staff introductions and making first impressions. Participants reaction to my presence varied and positive experiences are reflected with the codes friendly and acceptance, and more challenging experiences with access are represented by the codes unfriendly and limited access. Examples of field note entries relating to access are provided below:

Appendix 12 (continued) Reflexivity Examples

● Access

References 11-13 - 4.36% Coverage

The Research Nurse had verbally mentioned my study to a few colleagues, but hadn't formally emailed the team. She did this before I left, as well as distributing information cards and putting up my poster onto the research board.

The site file that I had compiled was discussed and placed within the nurse's office because it was decided that it holds no confidential data and only research planning and approval paperwork. It was agreed that if required this could be moved off the unit to a double locked room but this would make it difficult to access if needed.

Reference 14 - 3.24% Coverage

The Research Nurse offered me another tour of the department and this time introduced me to several staff as we circulated around. I was introduced as a 'university lecturer doing her PhD'. The Consultant had referred to me as a PhD student in his correspondence to his colleagues. We walked the whole unit and then agreed that I could wander on my own to make observations and introduce myself to others in the team.

References 15-16 - 3.72% Coverage

Introduction by the 2 gatekeepers was very different. The RN seemed to give me a status and emphasised my professional role. I wondered if this was to give me respect in the eyes of the experienced critical care team so that they would support me. ?need to prove my worth to get respect? The consultant was much more practical and succinct, didn't give a context or background and just stated I was a PhD student doing research. I wonder if they learn so differently too.

Appendix 12 (continued) Reflexivity Examples

Nodes			Access
Name	Files	Referen	
IPL definition_small talk_interview	22	53	
Reflexivity	23	206	
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The consultant was much more practical and succinct, didn't give a context or background and just stated I was a PhD student doing research. I wonder if the different learn so differently too.

Reflexive comments made relating to the researcher role reflect consent processes, capturing data in the field and the professional role conflict between the triple role as a researcher, an academic and a nurse, whilst adopting an outsider position.

Researcher role

Reference 1 - 0.62% Coverage

It was difficult to stay quiet with my professional knowledge on the subject and I wondered what I would have done if different advice had been given in terms of ensuring patient safety and being an NMC registrant myself.

Reference 2 - 0.62% Coverage

Back in the office again the Day NIC praised the Night NIC "Well done, I know that was hard". This seemed an important and intimate moment, I escaped to the bathroom (notebook in-hand) to write down a few field notes.

Reference 3 - 0.72% Coverage

9.30-9.50 Break: I left the unit and went to the coffee shop. I managed to catch up on notes, also wrote some in the toilet after the NIC ward shift handover and when others were writing too at the nurses' station (this latter way was the least obvious).

Appendix 12 (continued) Reflexivity Examples

Reference 4 - 2.39% Coverage

Observation about my observation: Standing against the wall taking notes means I have to engage with the staff to tell them what I am doing. But, if I sit at the N/station, there is less need for engagement and it is more relaxed and natural. I am adopting the same position as staff, eyes and head down onto paperwork. Not as visible that I am researching. Some staff forgot I was there e.g. the RN and staff nurse colleague (best friends). I wasn't listening but they realised I was still sat there at the end of their discussion and laughed at themselves for having a completely natural conversation which was more friendly than professional because of their social status. It's easier for me to chat at the N/station than to approach the end of a patient bed space and I am definitely less obtrusive. People can come to me at the station if they want to.

Nodes

Name	Files	Referen
IPL definition_small talk_interview close	22	53
Reflexivity	23	206
Access	20	126
Researcher role	19	80
drawing data	2	3
explaining research for consent	8	12
Introductions for consent	5	11
Observation data	4	4
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writing field note data	4	6
THEME 1_Embedding IPL_opportunities	40	712
THEME 2_Collaborative IPL_Community, c	38	420
THEME 3_Humanising IPL_being human	36	154

Drag selection here to code to a new node

Researcher role

Reference 1 - 0.62% Coverage

(It was difficult to stay quiet with my professional knowledge on the subject and I wondered what I would have done if different advice had been given in terms of ensuring patient safety and being an NMC registrant myself.

Reference 2 - 0.62% Coverage

Back in the office again the Day NIC praised the Night NIC "Well done, I know that was hard". This seemed an important and intimate moment, I escaped to the bathroom (notebook in-hand) to write down a few fieldnotes too.

Reference 3 - 0.72% Coverage

9.30-9.50
Break: I left the unit and went to the WVS coffee shop. I managed to catch up on notes, also wrote some in the toilet after the NIC ward shift handover and when others were writing too at the nurse's station (this latter way was the least obvious).

Reference 4 - 2.39% Coverage

Observation about my observation: Standing against the wall taking notes means I have to engage with the staff to tell them what I am doing. But, if I sit at the N/station, there is less need for engagement and it is more relaxed and natural. I am adopting the same position as staff, eyes and head down onto paperwork. Not as visible that I am researching. Some staff forgot I was there e.g. the RN and staff nurse colleague (best friends). I wasn't listening but they realised I was still sat there at the end of their discussion and laughed at themselves for having a completely natural conversation which was more friendly than professional because of their social status. It's easier for me to chat at the N/station than to approach the end of a patient bed space and I am definitely less obtrusive. People can come to me at the station if they want to.

Appendix 13: Dissemination

Study Year	Date	Event	Description
ONE	Oct 2012	NoECCN Annual Conference	Presented Research Poster on Research Design v1
TWO	Sept 2014	Teesside University Qualitative Researcher Forum	Led a 2 hour workshop on ethnography as a research methodology.
	Oct 2014	NoECCN Annual Conference 2014	Presented Research Poster on Research Design v2
			Guest Speaker: Research Design overview
THREE	April 2015	Newcastle University IHS Conference	Invited speaker: co-delivered research workshop on disseminating qualitative research
	May 2015	NIHR Research Conference	Presented Research Poster on Research Design v2
		NU Research Conference	Presented Research Poster on Research Design v2
		BACCN Regional Study event	Co-delivered presentation: Research in healthcare
	June 2015	NU HLS PGR Conference (1 st Prize)	Presented Research Poster on Research Design v2
	July 2015	Sheffield Hallam University Conference (3 rd Prize)	Presented Research Poster on Research Design v2
	Oct 2015	NoECCN Annual Conference	Presented Research Poster on Research Design v2
FOUR	Dec 2015	HENE Conference: 'working together and learning together'	Presented Research Poster on Research Design v2
	Sept 2016	Awarded PGR Conference Grant £250	To present at BACCN National Conference 2016
		BACCN National Conference 2016 (Awarded Poster Prize)	Presented Research Poster on Emergent Findings v1
	Oct 2016	NoECCN Annual Conference 2016	Presented Research Poster on Emergent Findings v1
FIVE	Sept 2019	BACCN National Conference	Oral presentation of PhD findings
	Nov 2019	CAIPE Research Symposium	Oral presentation of PhD findings
Online platforms: Academia.edu, LinkedIn, Research Gate, Northumbria University (PURE), Twitter.			

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